ORGANOPHOSPHORUS POISONING AND ITS MANAGEMENT –A REVIEW

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ABSTRACT:
Acute Poisoning by Organophosphorus (OP) compounds is a major global clinical problem, with thousands of deaths occurring every year. Most of these Pesticide poisoning and subsequent deaths occur in developing countries following a deliberate self-ingestion of the Poison. Metacid (Methyl parathion) and Nuvan (Dichlorovos) are commonly ingested OP pesticides; Dimethoate, Profenofos, and Chlorpyrifos are other less frequently ingested compounds in India. The toxicity of these OP pesticides is due to the irreversible inhibition of acetylcholinesterase (AChE) enzyme leading to accumulation of acetylcholine and subsequent over-activation of cholinergic receptors in various parts of the body. Acutely, these patients present with cholinergic crisis; intermediate syndrome and delayed polyneuropathy is other sequel of this form of poisoning. The diagnosis depends on the history of exposure to these pesticides, characteristic manifestations of toxicity and improvements of the signs and symptoms after administration of atropine. The supportive treatment of OP poisoning includes the same basic principles of management of any acutely poisoned patient i.e., Rapid initial management of Airways, Breathing, and Circulation. Gastric lavage and activated charcoal are routinely used decontamination procedures, but their value has not been conclusively proven in this poisoning. Atropine is the mainstay of therapy, and can reverse the life threatening features of this acute poisoning. However, there are no clear cut guidelines on the dose and duration of atropine therapy in OP poisoning. Cholinesterase reactivates, by regenerating AChE, can reverse both the nicotinic and muscarinic effects; however, this benefit has not been translated well in clinical trials. All these facts highlight that there are many unanswered questions and controversies in the management of OP poisoning and there is an urgent need for research on this aspect of this common and deadly poisoning.

Key Words: Poisoning, Organophosphorus Insecticides, Antidotes

INTRODUCTION:
Organophosphorus (OP) compounds are used as Pesticides, herbicides, and Chemical warfare agents in the form of nerve gases. Acute poisoning by these agents is a major global clinical problem, with thousands of deaths occurring every year. Most of the OP pesticide poisoning and subsequent deaths occur in developing countries following a deliberate self ingestion particularly in young, productive age group, as highly toxic pesticides are readily available at the moments of stress. Poisoning has been a common cause of medical admissions and deaths in Indian hospitals.
Table 1. Common dimethyl and diethylphosphoryl compounds

<table>
<thead>
<tr>
<th>Dimethyl OPC</th>
<th>Diethyl OPC</th>
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<tbody>
<tr>
<td>Parathion</td>
<td>Methyl parathion</td>
</tr>
<tr>
<td>Diazinon</td>
<td>Dichlorovos</td>
</tr>
<tr>
<td>Chlorpyrifos</td>
<td>Dimethoate</td>
</tr>
<tr>
<td>Dichlorofenthion</td>
<td>Malathion</td>
</tr>
<tr>
<td>Coumaphos</td>
<td>Fenthion</td>
</tr>
</tbody>
</table>

Table 2. Common OP pesticides with their brands available in India.

<table>
<thead>
<tr>
<th>Methyl parathion</th>
<th>Metacid, Parahitt, paradol</th>
</tr>
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<tbody>
<tr>
<td>Dichlorovas</td>
<td>Nuvan, DDVP</td>
</tr>
<tr>
<td>Dimethoate</td>
<td>Rogor, Roger, Rogohit</td>
</tr>
<tr>
<td>Chlorpyrifos</td>
<td>Durmet, Dhanuban, Radar</td>
</tr>
<tr>
<td>Fenthion</td>
<td>Dalf, Baytex</td>
</tr>
<tr>
<td>Profenofos</td>
<td>Current</td>
</tr>
<tr>
<td>Quinalphos</td>
<td>Krush</td>
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<tr>
<td>Monocrotophos</td>
<td>Phoskill</td>
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</tbody>
</table>

Hospital-based data from across the country show that Methyl-parathion, Dichlorovos, Dimethoate, Chlorpyrifos and Malathion are the common OPs related with human poisoning. ‘Metacid’, a popular brand for Methyl parathion is the most frequently ingested and probably the most toxic Organophosphate used for poisoning in India. Dichlorovos, or ‘Nuvan’ as it is commonly known, is moderately volatile solution; its use has been on rise for self harm in recent years.4 Dimethoate has a lethal dose of 10-12 gm and there addition to cholinergic syndrome. Malathion is relatively less-toxic and is used for the treatment of pediculosis and scabies in humans; and has a lethal dose is 1 gm/kg in mammals.

**Mechanism of toxicity:**

The toxic mechanism of OP compounds is based on the irreversible inhibition of acetylcholinesterase due to phosphorylation of the active site of the enzyme. This leads to accumulation of acetylcholine and subsequent over-activation of cholinergic receptors at the neuromuscular junctions and in the autonomic and central nervous systems. The rate and degree of AChE inhibition differs according to the structure of the OP compounds and the nature of their metabolite. In general pure thion compounds are not significant inhibitors in their original form and need metabolic activation (oxidation) in vivo to oxon form. For example, parathion has to be metabolized to paraxon in the body so as to actively inhibit AChE. The toxic mechanism of OP pesticides differs from that of carbamates which inhibit the same enzyme reversibly and are
sometimes useful as medicines (neostigmine, pyridostigmine) as well as insecticides (carbaryl). After the initial inhibition and formation of AChE-OP complex two further reactions are possible: (1) Spontaneous reactivation of the enzyme may occur at a slow pace, much slower than the enzyme inhibition and requiring hours to days to occur. The rate of this regenerative process depends on the type of OP compound. spontaneous reactivation half life of 0.7 hours for dimethyl and 31 hours for diethyl compounds. In general, AChE-dimethyl OP complex spontaneously reactivates in less than one day whereas AChE-diethyl OP complex may take several days and reinhibition of act as an antidote in OP poisoning With time, the enzyme-OP complex loses one alkyl group making it no longer responsive to reactivating agents. This progressive time dependent process is known as ageing. The rate of ageing depends on various factors like pH, temperature, and type of OP compound; dimethyl OPs have ageing half life of 3.7 hours whereas it is 33 hours for diethyl OPs. The slower the spontaneous reactivation, the greater the quantity of inactive AChE available for ageing. Oximes, by catalyzing the regeneration of active AChE from enzyme-OP complex, reduce the quantity of inactive AChE available for ageing. Since ageing occurs more rapidly with dimethyl OPs, oximes are hypothetically useful before 12 hours in such poisoning. However, in diethyl OP intoxication they may be useful for many days.

CLINICAL MANIFESTATIONS:

Acute Cholinergic crisis:

The clinical features of acute OP poisoning reflect the degree of accumulation of acetylcholine (ACh) causing excessive stimulation of cholinergic receptors at various organs (acute cholinergic crisis). Acetylcholine is the principle neurotransmitter in various synapses in the human body: parasympathetic nervous system, autonomic ganglia, neuromuscular junction and central nervous system. Owing to the widespread distribution of cholinergic neurons in central and peripheral nervous signs and symptoms may be mild, moderate or severe. On the newly activated enzyme can occur significantly in such situation. The spontaneous reactivation can be hastened by adding nucleophilic reagents like oximes, liberating more active enzymes. These agents thereby systems, the signs and symptoms involve various organ systems. Depending on the severity of the exposure, the spectrum of the clinical presentation varies, the basis of the receptor stimulation, the acute manifestations can be broadly divided into muscarinic, nicotinic, and central nervous system (CNS) effects. The important practical significance of this classification is that atropine only blocks muscarinic effects whereas oximes reverse both the nicotinic and muscarinic effects by reactivating AChE at both receptor sites because of their ability to reanimate inhibited AChE regardless of receptor type. Excess ACh in muscarinic receptors lead to increased
bronchial secretions, excessive sweating, salivation, lacrimation, miosis, bronchospasm, abdominal cramps, vomiting, involuntary passage of stool and urine. Cardiac manifestations comprise bradycardia, hypotension and QT prolongation with development of various types of arrhythmias. Various mnemonics have been used to describe the muscarinic signs of OP poisoning: DUMBELS (diarrhoea, urination, miosis, bronchospasm, emesis, lacrimation, and salivation) and SLUDGE (salivation, lacrimation, urine incontinence, diarrhoea, gastrointestinal cramps and emesis) are commonly used ones. Stimulation of the nicotinic receptors at muscle end plate results in twitching, fasciculation, muscle weakness and flaccid paralysis whereas stimulation of sympathetic ganglia leads to weakness and flaccid paralysis; whereas stimulation of sympathetic ganglia leads to hypertension and tachycardia. Heart rate and blood pressure can be potentially misleading findings as increase or decrease potentially misleading findings as increase or decrease weakness and flaccid paralysis; whereas stimulation hypertension and tachycardia. Heart rate and blood pressure can be potentially misleading findings as increase or decrease potentially misleading findings as increase or decrease can occur in both vital signs. CNS manifestations include headache, dizziness, tremor, restlessness, anxiety, confusion, convulsion and coma. Patients can also develop pancreatitis, hypo or hyperglycaemia and acute renal failure during this phase. The time of death after a single acute exposure may depending upon the dose, route of administration, agent and availability of treatment range from less than five minutes to nearly 24 hours. Respiratory failure and hypotension are the main causes of death in acute stage. Delay in discovery and transport, insufficient respiratory management, aspiration pneumonia and sepsis are common causes of death. Prognosis in acute poisoning may depend upon many factors like dose and toxicity of the ingested OP (e.g., neurotoxicity potential, half life, rate of ageing, pro-poison or poison), and whether dimethyl or diethyl compound.

INTERMEDIATE SYNDROME:

The intermediate syndrome is a distinct clinical entity that usually occurs 24 to 96 hours after the ingestion of an OP compound; after an initial cholinergic crisis but before the expected onset of delayed polyneuropathy. Approximately 10-40% of patients treated for acute poisoning develop this illness.

This syndrome is characterized by prominent weakness of neck muscles characterized by prominent weakness of neck flexors, respiration and proximal limb muscles. Though originally
seen with fenathion, dimethoate and monocrotophos, it is also seen in other OP compounds. The muscle weakness in intermediate syndrome may last up to 5-14 days and the condition regresses slowly if respiratory support is available. Though the exact pathogenesis of intermediate syndrome is unclear, the proposed mechanisms include persistent inhibition of AChE leading to functional paralysis of neuromuscular transmission, muscle necrosis, and oxidative free radical damage to the receptors.

DELAYED POLYNEUROPATHY:

Delayed polyneuropathy is an uncommon consequence of severe intoxication or intermittent and chronic contact with OP pesticides as in occupational exposure. It is due to inhibition of neuropathy target esterase (NTE) enzyme in nervous tissues by certain OP compounds. Many locally available OPs have negligible NTE inhibitory effect except chlorpyrifos which causes intermediate degree of inhibition. Delayed polyneuropathy is often unrecognized in humans and many times the clinical features are easily overlooked. Clinical manifestations are of distal symmetric sensory-motor polyneuropathy (distal weakness, paraesthesia, ataxia, diminished or absent reflexes). The symptoms usually begin 2-5 weeks after exposure to the chemical, and may last for years. Apart from these well-defined neural syndromes, OP pesticides can also cause chronic neurotoxicity and behavioural impairment in some patients.

Diagnosis:

The diagnosis of OP poisoning depends on the history of exposure to OP compounds, characteristic manifestations of toxicity and improvements of the signs and symptoms after administration of atropine. Diagnosis may be aided by insisting that the patient party send someone home to search for a possible poison container in the vicinity of the patient’s quarters. Garlic-like smell is an added clinical sign especially if the patient has ingested sulphur containing OP compound.

Analytical identification of OP compound in gastric aspirate or its metabolites in the body fluids gives the clue that patient has been exposed to OP compound.

Usually the level of plasma (pseudo) cholinesterase drops to less than 50% before signs and symptoms appear. Clinical severity has been graded on the basis of the pseudocholinesterase level (mild 20-50% enzyme activity, moderate 10-20% enzyme activity and severe <10% enzyme activity) though many believe that the enzyme activity does not correlate well with clinical severity. On the other hand, true or erythrocyte cholinesterase correlates well with clinical severity but is not available in most centres, especially in developing countries. These laboratory tests are of limited value in acute situation because treatment is
usually required before test results are available. However in doubtful cases and especially if laboratory facilities are not available, 1 mg atropine can be given intravenously. If this does not produce marked anticholinergic manifestations, anticholinesterase poisoning should be strongly suspected.

TREATMENT:

GENERAL SUPPORTIVE TREATMENT:

General supportive treatment

The supportive treatment of OP poisoning follows the basic principles of management of any acutely poisoned patient. Rapid initial assessment of Airways, Breathing, and Circulation is essential. Comatose or vomiting patients should be kept in lateral, preferably head down position with neck extension to reduce the risk of aspiration. Patent airway should be secured with proper positioning, placement of Guedel’s airway or with endotracheal intubation especially if the patient is by frequent assessment of arterial oxygen saturation. The skin and clothes of these patients are frequently contaminated with poison and vomiting. The clothes should be removed and the skin vigorously washed with soap and water. People involved in first aid should wear rubber gloves so as to prevent skin absorption of the poison. With soap and water. People involved in first aid should wear rubber gloves so as to prevent skin absorption of poison. Gastric lavage may help to reduce the absorption of the ingested poison and should be considered in patients presenting within 1-2 hours of ingestion of poison. The risks of gastric lavage include aspiration, hypoxia, and laryngeal spasm, and these can be reduced with proper management of airway. The induction of vomiting with soap water, ipecacuanha or other agents dissolved in petroleum distillates and can cause severe pneumonitis and acute may cause more harm than benefit as many OPs are respiratory distress syndrome when aspirated. Use of home remedies like ingestion of milk may dilute the poison but risks increased gastric emptying; and ‘pushing’ the poison into small bowel from where it is readily absorbed with early development of toxicity. On the contrary small amount of lipid-rich home remedy (e.g. raw eggs) may slow gastric emptying and delay the onset of poisoning and respiratory failure. Cathartics may further aggravate the OP-induced diarrhea leading to dehydration and electrolyte imbalance; therefore their use can not be recommended in routine practice. Activated charcoal helps to reduce the poison load by adsorbing it; this has been clearly shown to be effective in OP poisoning in animal experiment. Though its efficacy has not been conclusively proven in humans, single to multiple dose activated dose charcoal is routinely used in clinical practice.
Specific antidote treatment:

Atropine has been cornerstone in the management of OP poisoning for decades and will remain so in the future. It acts competitively at the peripheral and central muscarinic receptors and antagonizes the parasympathetic effects of excess ACh at these sites. It reverses life threatening features from poisoning; delay or inadequate atropine can result in death from central respiratory depression, bronchospasm, excessive bronchosecretion, severe bradycardia, and hypotension. There are wide variations in recommended doses and regimens of atropine therapy in different parts of the world. Moreover, duration of atropine treatment and titration of the dose is not clear.

Current guidelines recommend the use of bolus doses to attain target end-points, followed by setting up an infusion to maintain these end-points. Target end points for atropine therapy:

- Heart rate >80/ min
- Dilated pupils
- Dry axillae
- Systolic blood pressure >80 mm Hg
- Clear chest with absence of wheeze

We use an initial bolus of 3-5 ampoules of atropine (each ampoule containing 0.6 mg) with subsequent doses doubled every 5 minutes until atropinization is achieved. When the patient achieves most of (at least 4 out of 5) the target end-points for atropine therapy.

i.e., ‘fully atropinized’, an intravenous infusion is set up to maintain the therapeutic effects of atropine. While there are different approaches of atropine infusion, we use 20% of initial atropinizing dose per hour for first 48 hours and gradually taper over 5 -10 days, continuously monitoring the adequacy of therapy.

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Oximes:

Oximes work by reactivating acetylcholinesterase that has been bound to the OP molecule. Pralidoxime is the most frequently used oxime worldwide; other members of the class include obidoxime, and experimental HI 6 and HLO 7. Oximes can be highly effective in restoring skeletal muscle strength and improving diaphragmatic weakness where atropine has virtually no effect.

Clinical opinions of oxime therapy in OP poisoning are divided, even in cases of massive human intoxication. Outcomes following oximes therapy depends on various factors like the type of poison ingested, the poison load, time elapsed between OP ingestion and institution of therapy, duration and doses of oximes therapy. In some cases oximes may prove ineffective for several reasons: inadequate dose leading to subtherapeutic blood levels, early termination of oximes therapy, continuous reinhibition of the reactivated AChE from pesticide persisting in the body. The therapeutic window for oximes is limited by the time taken for ageing of the enzyme OP complex because aged enzyme can no longer be reactivated by oximes. However, others propose prolonged maintenance of an appropriate oxime concentration irrespective of the type of ingested OP. Some advice oximes therapy for the treatment of intermediate syndrome. Various dosage regimens have been recommended from intermittent oxime administration to continuous infusion following a loading dose. While there is no clear consensus on the dose and duration of oximetherapy. Recently the WHO recommended Pralidoxime dose of 30 mg/kg bolus iv followed by continuous infusion of 8 mg/kg/hr until clinical improvement. Dizziness, headache, blurred vision, diplopia are common side effects of oximes therapy. Rapid administration may lead to tachycardia, laryngospasm, muscle spasm, transient neuromuscular blockade. Difficult availability and cost factor are other drawbacks for routine use of oximes in clinical practice.
**Benzodiazepines:** Diazepam and other benzodiazepines are widely used for the treatment of op induced seizures and restlessness and agitation consequent to either poison itself or sequel of atropine therapy.

Moreover diazepam, due to its central respiratory depressant action which usually follows overstimulation of the CNS respiratory centres.

**PREGNANCY:**

Pregnant patients who have ingested Op insecticide during the second or third trimester of Pregnancy have been treated successfully with atropine and pralidoxime and later delivered healthy newborn with no significant abnormalities.

However **foetal distress** is a possible complication of both of the poisoning as well as its treatment.

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CLINICAL STUDY TO EVALUATE THE EFFICACY OF DARVIGHRUTAIN MANAGEMENT OF GARBHINI PANDU WITH SPECIAL REFERENCE IRON DEFICIENCY ANEMIA

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(HOD and Asso.professor- Streerog-Prasutitantra Dept. Ashvi Rural Ayurved college Medical College ,Manchi Hill, Sangamner.)²

Abstract: Since the evolution of life on this universe, woman has been placed in almost worshiping place due to her power of “janani”. Acharya Harita has described Garbhini viivarnata while Charaka mentioned Garbhini Balavarnahani during 6th month of pregnancy and Kashyapa has described Ashita sati (paleness during pregnancy) which if not treated may lead to maternal death. Some physiological changes occur during the period of pregnancy. Physiological anaemia is one among them. There is marked demand of extra iron and vitamins during pregnancy, specially in later half. Even an adequate diet cannot provide this extra demand. Thus there always remains a physiological deficiency stage during Pregnancy, which if not fulfilled will lead to pregnancy complications. Prophylactic supplemental of iron and other compounds are given to each & every pregnant woman, which may have adverse effects on body. So, to prevent adverse effects, safe Ghruta preparation i.e “Darvi Ghruta ” is selected for study ,which is useful in treatment of pandu. It is said to increase bala, varna, ojas of pregnant woman and subsides other pregnancy complications of anemia.

Daruharidra is a content of Darvyaadi Gruta, having Deepana, Yakrituttejaka, Pittasaraka properties. Deepana help to improve Mandagni. Yakrit is a moola of Raktavaha Srotasa in pandu Alparaktata is found. By Yakrituttejak property of Daruharidra, initiates Yakrit to make good quantity and quality of Rakta Dhatu. Daruharidra having Pandupaha property.

Keywords:- Darvi Ghruta , anaemia, Panduroga , Iron deficiency anemia.

Introduction:
Anemia is one of the universal problem and there are different types of anemia was explained.Iron deficiency anemia has a very high global incidence affecting approximately 20% of the world”s population.Nearly 50%of the individual with iron deficiency progress to iron deficiency anemia .iron deficiency is not only seen in developing countries with wide spread social and economical depravation but also in developed countries.

According to “WHO”

Definition:-

Anemia in pregnancy is defined as haemoglobin concentration in peripheral blood less than 10gm/100ml.
Iron deficiency anemia has a very high global incidence affecting approximately 20% of the world’s population. Nearly 50% of the individual with iron deficiency progress to iron deficiency anemia. Iron deficiency is not only seen in developing countries with widespread social and economical deprivation but also in developed countries.

**Definition**: -

Iron Deficiency anemia is defined as haemoglobin concentration in peripheral blood is less than 10 gm/dl.

In India also depending on age and sex prevalence of iron deficiency anemia (IDA) has been reported to range from 40-90%. Majority of them being woman and children. In Ayurveda anemia is co-related with pandu roga. In Ayurveda anemia is co-related with panduroga. Panduroga is defined as pitta dominant tridoshaja disease, where vivarnata of twaka (discolouration of skin) is mainly pandu (pallor) due to alpa rakta. Many features are found in anemia, as per modern literature and ayurvedic literature, some subjective parameters which are common in both panduroga and iron deficiency anemia.

In ayurveda different combination of herbometallic drugs are explained by which these drugs, this disease can be treated successfully and also simultaneously appetite, immunity will get improved without any adverse effects of the drugs in the patient.

Garbhini pandu is a challenging problem to the health of mothers in reproductive life. Pregnancy is a state in which all the physiological functions are hyperstimulated in order to meet the demands of the growing fetus, hence woman should take nourishing diet. The rasa and the rakta of the mother are carried to the fetus for its proper growth and development. So this increased demand of nutrition has to be compensated. If not, it leads to dhatukshaya in gorbhini stree. Among the various dietetic factors, iron is one which is in great demand by the fetus and placenta most of the women are already suffering from low grade iron deficiency anemia, because of their multi-parity, prolonged lactation, dietetic deficiency and worm infestation. When these women conceive the severity of anemia increases.

Due to anemia many complications develop during pregnancy, labour and in puerperal period these are prematurity, low birth weight babies, congestive cardiac failure, post-partum haemorrhage and infection.

**Aims & Objectives**:

1. To Study clinical efficacy of the DARVI GHRUTA in the management of the GARBHINI PANDU with special reference to anemia in pregnancy.
2. To evaluate the local effect of Darvi Ghruta in Garbhini Pandu.
3. To Review ancient and modern literature about Garbhini Pandu And Anemia In Pregnancy

**Materials & Methods**:

In present case control study, “CLINICAL STUDY TO EVALUATE THE EFFICACY OF DARVI GHRUTA IN MANAGEMENT OF GARBHINI PANDU WITH SPECIAL REFERENCE IRON DEFICIENCY ANEMIA” was carried out on 30 patients attending the OPD of prasuti tantra
and stri. rog department, Ashvi Rural Ayurved College, Manchi Hill, Sangamner.

Diagnosis was done on the basis of signs and symptoms of panduroga iron deficiency anemia. Investigations of blood, urine and stool have been carried out to diagnosis and to rule out any other pathology. A simple random sampling method was followed for the clinical study.

**Inclusion Criteria:**

Subject suffering from following group of symptoms were included

- Ayasena Shwas
- Panduta
- Daurbalya
- Pindikodveshtana
- Hritspandan
- Gastational age in 2nd trimester.
- Age 18 to 35 yrs.
- Anemia from 4th month of pregnancy onwards will be considered.

**Biochemical Parameters:**

1. Hb 6 to 10 gm/dl.

**Exclusion Criteria:**

a) Hemoglobin percentage below 6 gm%.
b) Bleeding disorde
c) Patients from 3rd trimester of pregnancy
d) Any other major illness
e) High risk pregnancies were rejected
f) Pregnancy induced HTN
g) Patient with diabetes
h) Hyperthyrodism or Hypothyrodism.

**Investigations-**

1. Haematology – Hb gm%, RBC count, MCV, PCV, MCH,MCHC.
2. Other routine ANC check-up investigation

**Treatment Schedule:**

Simple randomized sampling technique will be selected in two group.

Group A – 30 patient will be receive Darvi Ghruta with milk and sharkara for application treatment, 10 gm at morning in empty stomach.

Group B – 30 patients will receive Ferrous sulphate 200 mg for application treatment, 1 tab
for O.D after meal.

In ayurveda the vehicle is very important for success of the therapy.

**Follow-up period** : After completion of therapy.

**Pathya-Apathya : (Dietic & behavioural Regimens)**

**Pathya-(healthy diet)-**

Green leafy vegetables, puran sali (One type of old rice), beet root, bajra, mudga (Phaseolus radiatus) mashur (Lens culinaris), spinach, apple, Amalaki, Kharjur, amranthus spinosus, peanuts, jaggary, mamsa (meat of domestic animals) etc.

**Apathya : (Harmful diet) –**

Amla (sour), lavan (salt), kshar (alkali), atiusha (excessive hot), atitikshan (excessive pungent), fermented viruddha & asatmya ahara (in-compatible and unwholesome food), Divaswapna (day sleep), Ratrijagarana (night awakening) physically & mentally fatigue work, vegadharana (suppression of natural urges).

**Criteria for Assessment :**

a) The result was assessed on relief of the signs and symptoms of the disease.

b) Biochemical and haematological parameters after completion of the treatment.

**Grading the assessment criteria on clinical features :**

**A- Panduta In - Twaka, Nakha, Netravartma, Jihva, Hastapad**

1. Absent - 0
2. In any 2 of these – 1
3. In any 3 of these – 2
4. In any 4 of these – 3

**B- Daurbalyata**

1. Not Present – 0
2. After heavy work, relieved soon & tolerate – 1
3. After Moderate work relieved later & tolerate – 2
4. After little work relieved later – 3

**C-Hridspandan**

1. Not Present – 0
2. After heavy work, relieved soon & tolerate - 1
3. After Moderate work relieved later & tolerate - 2
4. After little work relieved later - 3

**D-Shunakshikut shotha**

1. bsent - 0
2. Mild – 1  
3. Moderate – 2  
4. Severe - 3  

E- Rukshata In - Twaka, Nakha, Netravartma, Jihva, Hastapadata
a
1. Absent – 0  
2. In any 2 of these – 1  
3. In any 3 of these - 2  
4. In any 4 of these - 3  

F-Ayasena Swasha
1. Not Present - 0  
2. After heavy work, relieved soon & tolerate – 1  
3. After Moderate work relieved later & tolerate – 2  
4. After little work relieved later - 3  

G-Pindikodweshtanam
1. Absent – 0  
2. After heavy work – 1  
3. After moderate work – 2  
4. Whole day, severe, require medicine - 3  

H-Agnimandya
1. Normal – 0  
2. Good -1  
3. Moderate-2  
4. Reduced-3  

Assessment of Results:

The paired „t‟ test & unpaired „t‟ test were carried out for signs & symptoms, investigations & comparison between two groups. Overall effect on signs & symptoms were calculated by percentage of relief.

Observation & Results:

Maximum number of patients in this study reported in 25 to 35 year i.e. 60% followed by 40% for patients between 18 to 25 years.

Incidence of pandu roga was seen to be maximum in Hindus (75%) followed by muslim (25%), patients with mixed diet formed (80%) & vegetarian (20%). 70% of patients were multigravida and 30% were primi.
Observation table-

<table>
<thead>
<tr>
<th>Sings &amp; symptoms</th>
<th>Before treatment</th>
<th>After treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>General weakness</td>
<td>Present</td>
<td>Absent</td>
</tr>
<tr>
<td>Giddiness</td>
<td>Present</td>
<td>Absent</td>
</tr>
<tr>
<td>Pallor</td>
<td>Moderate</td>
<td>Mild</td>
</tr>
<tr>
<td>Hb%</td>
<td>8.4gm%</td>
<td>10.6gm%</td>
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Result: After complete management, her Hb% level is increased & got relief from above signs and symptoms.

Group A: Provided highly significant effect in relieving ayasen swasha(60.91%), Daurbalya (63.49%), panduta (74.05%), hrutspandan (51.92%), shwasa (69.96%), Bhrama (66.29%), Anna aruchi (96.27%), shotha (56.21%), pindikodveshthan (87%), Agnimandya (84%)

Group B: Showed highly significant effect in relieving ayasena swasha (47.29%), Daurbalya (83.25%), panduta (15.09%), Shwasa (53.11%), Bhrama (48.06%), Annaaruchi (40 %), shotha (92.06%), Pindikodveshthan (72%).

Effect of Haemoglobin :-

Group A – The mean score of Hb% which was 9.075 before treatment increased to 10.325 after medication when these values were analysed statistically the scores were highly significant with P<0.001,

Group B – The mean score of Hb% which was 8.295 before treatment increased to 9.975 after treatment and was maintained. when those values were analysed statistically the scores were highly significant with p<0.001.

When the data of the two groups were compared they were found to be statistically insignificant, both after predication (p=0.314), But the percentage of improvement after medication was 13.62% in Group A and 11.72 in Group B.

Other routine ANC check-up investigation was within normal limit before and after treatment.

Discussion:

In pregnant woman due to nourishment of fetus, there is dhatukshaya which leads to vatarrudhi, So bruhaniya dravyas has to be taken by her.

In Garbhini –Due to insufficiency of nutritious ahar, upavasa, raktasrava and dauhruda avamana which lead to many of the disorders by vitiating the doshas. Vyadhis manifested due to
these are upavishtaka, nagodara, linagarbha, mudhagarbha, kubja, kalithya, palithya, kilasa, kushta, pandu etc infetus.

Garbhini pandu is one which is caused mainly due to the increase demand of nutrition by the garbhnini which is not being supplemented by adequate nutritional diet. As the disease is characterised by pandutwa in the body which is caused by alparaktata where rakta (blood) is known to be one among the saptadhatu which has got jeevana karma hence raktavardhana chikitsa becomes important in pregnant woman.

**Action of darvi and ghruta are as follows:**

Darvi Ghruta contains drugs are having Katu Rasa. Katu Rasa is Agni Deepana, Pachana, Shodhana and it clears obstructed Srotasa. These all properties of Katu Rasa assist in Samprapti Vighatana of Pandu Roga. Daruharidra is a content of Darvyadi Gruta, having Deepana, Yakrituttejaka, Pittasaraaka properties. Deepana help to improve Mandagni. Yakrit is a moola of Raktavaha Srotasa in pandu Alparaktata is found. By Yakrituttejak property of Daruharidra, initiates Yakrit to make good quantity and quality of Rakta Dhatu. Daruharidra having Pandupaha property. Tvacha has properties varnya.

So mentioned darvi ghruta is suitable in the garbhnini pandu with special reference to anemia in pregnancy.

**GHRUTA:**

RASA - madhur
GUNA - snigdh, guru
VIRYA - sheet
VIPAK - madhur
DOSHGNATA - vata and pitta shamak

**Action** - Yogavahi, saskaranuvartii(Its action can be seen according to the other medicinal dravyas guna and karma ,which is used for ghrita siddhi) Both drugs are effective to relieve signs & symptoms of panduroga (IDA) & provided significant effect in increased haemoglobin percentage in between the groups the herbo – mineral drugs. Darvi ghruta has proved to be quiet effective in the treatment of garbhnini pandu without involving undesirable side effects.

On results of this research work it may be concluded that Darvi ghruta is therapeutically equally good & sometimes better than ferrous sulphate.


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A PILOT STUDY ON THE EFFICACY OF MARICH LEKHANANJAN IN THE MANAGEMENT OF ARMA

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Shalakya Tantra, SSVP Ayurved College, Hatta, Hingoli (M.S.)

Abstract:

Arma is common in tropical region like India. It has been described under “Shuklagata Sadhya Vyadhi” in Ayurveda. It is disease in which wing like growth is gradually developing from either Kaneenika Sandhi (inner canthus) or Apang Sandhi (Outer canthus) towards the cornea. On the basis of signs and symptoms ‘Arma’ is correlated with conjunctival degeneration including ‘Pterigium’ in modern medical science.

Arma is Chedan sadhya Vyadhi. However in initial stage having thin membrane and curd like colour can be treated Lekhana Anjanas. It is widely used to prevent speedy growth of membrane and it is also beneficial after surgery for prevention of relapse. In present study 20 patients of Arma were selected and administrated Marich Churna Anjana in Haridra swarasa mentions in Yogaratnakar Uttarkhand p.no. 381.

Introduction:

Arma is disease of Shukla Mandala. It is disease in which wing like growth is gradually developing from either Kaneenika sandhdi or Apang sandhi or from both sides towards Krishna mandala (cornea). If this layer invades the Krishna mandala which is transparent in nature it causes disturbance in the vision.

It is correlated with ‘Pterigium’. Pterigium is a triangular shaped growth consisting of bulber conjunctival epithelium and hypertrophid subconjunctival connective tissue occurring medially and laterally in the palpebral fissure and encroaching onto the cornea. Pterigium is more commonly found in people residing tropical and sub-tropical area. Risk factor includes outdoor work, exposure to UV radiation, dark skin complexion, dry and dusty climate, genetic predisposition etc. Prevalence is higher in factory workers, ruler areas.

Arma is a type of Mamsavriddhi all Mamsavriddhi is kaphatamaka. Hence Acharyas have indicated Lekhana and Chedana as main treatment.
In initial stage of Arma, where the growth is thin and confined to a small area limited to Shukla mandala, use of Lekhananjana is indicated where as when it is thick, fleshy and extensive and encroaches the Krishna mandala then excision is advised. Anjana karma is a process in which specific medicaments are pasted over the marginal conjunctiva in a systematic way from Kannenika sandhi to Apanga and vice-versa. Lekhananjana is one among 3 types of anjanas described by Acharya Sushruta. It scrape and expel the doshas from Netra, Vartma sira, Netra kosha and Ashruvaha strotasa through the mouth, nose and eye considering all above facts formulation of Marich churna added with Haridra-rasa used as lepa mentioned in Yogratnakar Uttarkhand were used to assess the effect of non surgical approach of Lekhana karma by Lekhana Anjana with cheap, cost effective, non surgical treatment for Arma.

Material and Methods –

1) Selection of patients –

The clinical study was organized in the department of Shalakyatantra of SSVP College, Hatta, Dist. Hingoli. The patients were selected randomly and freely given informed consent was obtained from every subject prior to research participation. A special research proforma was prepared comprising of Ayurvedic and modern parameters essential for diagnosis and assessment of disease.

2) Inclusive Criteria –

a) Age between 20 to 60 years old patients.

b) Clinically diagnosed patients of Arma (pterigium) covering the conjunctiva and cornea less than the papillary margin.

3) Exclusion Criteria –

a) The patients in which pterigium covering over the papillary area.

b) Patients having any systemic disease like hypertension, diabetes, etc.

4) Drug, dosage and duration –

One Harenu Matra of Maricha churna added with Haridra rasa was applied locally in the eye once a day (morning) for 1 month.

5) Application –

Maricha lepa (Anjana) prepared by Maricha churna and Haridra rasa made freshly was rubbed properly and used over lower lid by disinfected index finger.

6) Investigations –

Laboratory investigations like Hb%, TLC, DLC, ESR and RBC was done only for rule out the diseases. Examination of eye was performed for recording the vision
and ruling out any other ocular pathology which includes – visual acuity, refraction and intraocular pressure.

**Assessment Criteria –**

For assessment of the efficacy of the trial therapy, following subjective and objective parameters were adopted.

1) **Subjective Criteria –**
   a) *Mamsa vridh* (Fleshy growth of conjunctival tissue)
   b) *Netrastrava* (Lacrimation)
   c) *Prakash asahishnuta* (Photophobia)
   d) Foreign body sensation (*Gharsha*)
   e) *Raga* (Redness of conjunctiva)

2) **Objective Criteria –**
   a) Vascularity

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Mamsa vridh</em> (Fleshy growth of conjunctival tissue)</td>
<td>Absent</td>
<td>Mild muscular growth before limbus</td>
<td>Encroach cornea upto 1 mm from limbus</td>
<td>Encroach cornea &gt; 1 mm</td>
</tr>
<tr>
<td><em>Netrastrava</em> (Lacrimation)</td>
<td>Absent</td>
<td>Occasionally</td>
<td>Intermittent</td>
<td>Continuous</td>
</tr>
<tr>
<td><em>Prakash asahishnuta</em> (Photophobia)</td>
<td>Absent</td>
<td>Photophobia on exposure to bright light</td>
<td>Intermittent</td>
<td>Continuous</td>
</tr>
<tr>
<td><em>Gharsha</em> (Foreign body sensation)</td>
<td>Absent</td>
<td>Occasionally</td>
<td>Intermittent</td>
<td>Continuous</td>
</tr>
<tr>
<td><em>Raga</em> (Redness)</td>
<td>Absent</td>
<td>Occasionally</td>
<td>Redness in external environment</td>
<td>Regular</td>
</tr>
<tr>
<td>Vascularity</td>
<td>Absent</td>
<td>Mild with unidirectional pattern</td>
<td>Moderate with unidirectional and enlarged vessels</td>
<td>Marked with unidirectional and engorged vessels</td>
</tr>
</tbody>
</table>

**Statistical Analysis :**

For the assessment of result Ayurvedic and modern parameters were followed. The results obtained were statistically analysed in the group of experimental patients. Which are 20 patient.

- Overall assessment of Therapy of chart

<table>
<thead>
<tr>
<th>Group</th>
<th>cured</th>
<th>%</th>
<th>Improved</th>
<th>%</th>
<th>Not Improved</th>
<th>%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>16</td>
<td>80</td>
<td>2</td>
<td>10</td>
<td>2</td>
<td>10</td>
<td>20</td>
</tr>
</tbody>
</table>
Results and discussion:

This observation is based on table and group. This graph shows out of 20 patients of arma 16(80%) patients got relief in signs and symptoms. The pts were registred in college OPD and completed the study. The study was based on the pts who came for regular followup and completed the study satisfactorily. So the dermographic and clinical data is based on 20 patients. In this group 20 patients were treated with marich churna anjana daily for 30 days, in which 16 (i.e. 80%) patients got relief in sign and symptoms so Marich anjana has effect in Arma. There is no side effect of marich Anjana.

Discussion:

Arma is (Mansa Dhatu Dusta) Kapha predominant Tridoshaja Vyadhi. Looking in to the pathogenesis of Arma it becomes clear that drugs having kaphanashaka and lekhana quality can effectively cure this disease.

Maricha has katu rasa which is formed by vayu and Agniahbhoot, having properties like Ruksha, Ushna, Laghu and shookshma Guna which are beneficial in kapha predominat doshas. It also has Mansa Vilekhana property.

Laghu guna has lekhana and Ropana properties. Tikshna guna is shigh rakaari which means it starts action very quickly and will encounter kapher Dosha.

Ushna virya also has kaphashamaka and vatahara property.

This uses of lekhana anjana gradually reduces the thickness of the memberane of pterigium and preventing the growth of Arma and also reduces the size.
Conclusion:

In the present trial marich churna anjana was found to be effective in reducing signs and symptoms of Arma and statistically significant result were seen.

No adverse and toxic effects were observed during and after the completion of trial.

References:

BENEFITS OF YOGASANA AND ITS MECHANISM OF ACTION

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Our body has many organs, each performing a specific function for the body. Coordination amongst all these functions is essential in both, the resting condition and during active exercises. The activities of different systems are adjusted with the changing demands of new situations. Yoga also helps in maintaining the homeostasis, therefore one can control psychosomatic diseases like Diabetes or Asthma. Yogasana will lead to coordination of various organs that ultimately leads to fineness of functions either they are internal or external. Almost all asanas work on the vertical column which is most important as all nerves merge from the vertibral column. The spine is made healthy and stronger with the help of regular training through exercises and asanas. Vital functions improve as it works on C.N.S. Pranayama increases the working capacity of lungs and provides many nanoparticles to circulation ultimately boosting the immune system.

Key words: Yogasanas, CNS, Postures, Pranayama, Prathyahara, Dhyana.

Introduction

Yoga literally means ‘union’ or ‘to join’ i.e., union within the divine consciousness. Hatha yoga, Ashtang yoga, Bhakti yoga, mantra yoga, Dnyan yoga, Karma yoga, Raj yoga appear like different types of yoga due to their different methods and techniques but the main objective of all of them is liberation, salvation or to attain Samadhi, the highest state of chitta (consciousness), by controlling its vrittis (tendencies, desires) arising in it, out of attachment with the maintenance world, so as to merge into the divine principle (absolute consciousness). Yoga is one of the six great philosophies of India. It is an experimental science.

Stress is an outcome of the modern lifestyle. It is produced out of dissatisfaction, frustration and rejection. At present human existance is challenged by the stress, disorders for the psychosomatic diseases such as hypertension, hyperacidity, insomnia, heart diseases, diabetes, asthma etc. Although the system of yoga is not developed for the purpose of treatment, it has been observed through the applied research that the regular practice of yoga not only controls the diseases but also promotes and
maintaines the healthy condition by body and mind and prevents the disease processes. Yoga is not an alternative to any conventional therapy but it definitely supports the healing process.

**Yoga in brief**

In Hatha Yoga, kriyas, pranayamas, bandha, mudra and nadanusandhan are practiced in their sequence.

In Ashtang yoga, yama, niyama, asana, pranayama, pratyahara, dharana, dhyan and samadhi are eight parts of ashtang yoga of yogi patanjali.

Scientific research on yogas was done by Swami Kuvalayananda in 1924. He and Dr. Vinekar then described the principles of yoga therapy in terms of Anatomy and Physiology.

**Effect of yoga on Various Systems**

<table>
<thead>
<tr>
<th>System</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Digestive system</td>
<td>C.N.S. has no direct control over this system but hypothalamus has, as it controls emotions, even the muscle tone of the smooth muscles of the visceral part is affected due to our emotional status (anger, hatred, irritation), unsatisfied mind has the negative approach, almost all asanas as well as kriyas influence stomach, colon, urinary bladder and the liver. Dhauti is mainly related to esophagus and stomach, while Basti is concerned with the anus, rectum, and colon. The external sphincters of the anus are contracted and relaxed alternately in Ashwini mudra.</td>
</tr>
<tr>
<td>2. The Circulatory system</td>
<td>Many asanas such as shirshasana, Sarvangasana, viparatakarni, halasana, mayurasana few pranayamas like Ujjayi and Bhasrika pranayamas as well as uddiyan, nauli, jalandhar bhandha specially influence the blood circulation. During padmasana and vajrasana workload on the cardiac function when body and mind is properly relaxed and mental peace is experienced, the muscle tone is reduced, the blood vessels are also get relaxed which are otherwise constricted due to tension. The heart rate is reduced b.p. comes to the normal level. This is possible by regular practice of shavasana, circulation of endocrine glands, the fascial muscles enhanced, resulting fresh and energetic gesture.</td>
</tr>
<tr>
<td>3. Respiratory system</td>
<td>Besides supplying the oxygen, respiratory system also contributes to the state of consciousness, awareness and attention. Pranayam deals with this respiration is emi-involuntary in nature, hence we can interfere, no other system can be regulated as per wish. Our breathing is related to the</td>
</tr>
</tbody>
</table>
life force (prana) on one side and the mind, on the other. Therefore, the pranayam is like a bridge between the physical existence and the mental ability.

4. Muscular System

Due to emotional impact, muscle tone is affected which in turn disturbs the functions of the body. If asanas are performed in a relaxed way, the co-ordination between the nervous and the muscular systems increases, the muscle tone is corrected and thus the emotions are balanced. When the muscles are relaxed, the muscle tone is reduced and at this moment there is no scope for worries and tensions. During uddiyан and nauli, the diaphragm and the rectus abdominis muscles are contracted and therefore, the positive and negative pressure is created in the blood.

5. Nervous System

We become aware of inner environment, thinking analysis and modifications are constantly going on at the intellect level. After leading the technique of asanas, we can focus our attention to the infinite so that lower centers of the brain are fress to maintain the posture efficiently and to correct and balance the muscle tone. Main objective of asanas, pranayamas, bandhas and mudras is to strengthen nervous system so as to counter balance the spiritual power of kundilini, when awakened.

6. Endocrine System

Emotions, hormones of the endocrine glands, behavior and mental health are deeply correlated with each other. When the function of these glands is maintained at the optimum level by practicing asanas, bandhas and mudras, regular physical and mental health are maintained automatically. However, the yogic practices should not be done like exercises. The regular yoga practitioner experiences, contentment and a peaceful state of mind and therefore, stress is never felt. Yoga also helps in maintaining the homeostasis. Therefore, one can control psychosomatic diseases like diabetes or asthma with the help of yogic practices. However, a suitable change in the lifestyle and diet control is also essential for such results. In women with accelerated or delayed menstrual cycle, uddiyan bandha, kapalabhati, nauli, dhanurasana, halasana is helpful.
7. The skeletal system

Flexibility and the efficiency in the movements of the body depends on the strength and capacity of the joints. Functional efficiency of the joint depends on the nutrition and the regular exercise given to the muscles and the tendons of the joints. By regular practice of asanas, the flexibility of the joints can be increased. Learning and regular practice of asanas in young age offer not only the flexibility but also a proper development of the bones and the joints. In children, it enhances height. Spinal column is an important factor of our physical appearance. We are as young as our spinal column. A strong flexible spine makes our life more comfortable. Almost all the asanas are related to spinal column. It has been observed that those who practice asanas regularly, rarely suffer from spinal ailments like lower back pain.

Discussion-

Yama, niyama, asana, pranayama, pratyahara, dharana, dhyana and Samadhi are eight parts of ashtang yoga of Yogi Patanjali. He considers yoga as a discipline. Unless yoga is practiced regularly, sincerely and in most disciplined manner, one cannot reap its benefits. First four steps are known as Bahirang yoga (external part of yoga) and the rest four steps from the antarang yoga (internal part of yoga) or the Raj yoga.

Conclusion-

Aasanas are placed in the beginning of the yogic curriculum. The purpose is quite evident. Aasanas are psycho-physical practices to culture body and mind for further higher practices of yoga like pranayama, pratyahara, dhyana etc. The body and mind are made healthy and are trained in such a way that a necessary equilibrium is established in overall functions. One reaches the stage of asanajaya i.e., mastering the asanas which is possible after a good deal of practice of asanas for a long time. One should be able to sit for hours in a meditative asana without any discomfort or internal disturbances. It is nothing but reconditioning of psycho-physiological mechanisms of the body. The CNS uses its lower centres of integration for the maintenance of posture and equilibrium. This involuntary control depends on the information coming from the proprioceptors, situated in muscles, joints, tendons and soles. Any voluntary effort on the part of the body or mind signifies an activity of the higher centres, which dominates the lower centres of integration.
Daily practice of yogasanas undergo changes at macro to micro level including psyche of the one, leads to several benefits to all body systems and it has very significant change in life defamatory leading to trim health as well.

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IMPACT ON GLOBALIZATION IN INDIAN ECONOMY

Dr. Rajesh G. Umbarkar
Nanded.

ABSTRACT:

Globalization is an important element of economic reform, introduced in India in 1991. Owing to globalization it was expected that globalization should be beneficial for the economy, as a whole and should raise the welfare of all people throughout the country. It was expected that capital and technology will inflow from developed countries of the world into India. This implies that it should raise the rate of Economic growth in country and reduce poverty and that it should not increase inequalities in the Economy, Also, There should be social integration of the economy with rest of the world. Accordingly India would have access to the fruits of global growth.

INTRODUCTION:

Imagine a small village market where all are free to come and sell their Products at whatever price they desire. There are no limitations on control of their products or the prices. This is a globalised trade. Anyone, in general context referring to any country, that can participate to set up, acquire, merge industries, invest in equity and shares, sell their products and services in India. But how does globalization work? What are its effects on the Indian economy? Let us study in-depth about it below.

Humans have moved into a phase where everything is accessible without any difficulty. What if you weren’t able to buy goods from an online site managed by an international brand? It might make you feel angry, or irritated. The world wasn’t always open to free trade or cross-border investments. It was around two to three decades ago when the concept of ‘globalization’ was spread far and wide. This allowed nations to carry out trade and other activities in a systematic manner.

India was one of the prime nations which gained immensely post the introduction & implementation of globalization. The rise of foreign investment in the retail, corporate and scientific sectors is very much evident in the nation. For further learning about globalization and India, it is crucial to get familiar with the prime concept, that is, globalization.

According to the chamber Dictionary, means “to make global, that is worldwide, or effecting or taking into consideration the whole world or all people”.

WHAT IS GLOBALIZATION:

Globalization is the free movement of people, goods, and services across boundaries. This movement is managed in a unified and integrated manner. Further, it can be seen as a scheme to open
the global economy as well as the associated growth in trade (global). Hence, when the countries that were previously shut to foreign investment and trade have now burned down barriers.

Considering a precise definition, countries that abide by the rules and regulations set by WTO are part of globalization. These procedures include oversees trade conditions among countries. Apart from this, there are other organizations such as the UN and different arbitration bodies available for supervision. Under this, non-discriminatory policies of trade are also enclosed.

**Indian Economy Reacts to Globalization:**

When we talk about globalization and the Indian economy, one name strikes our mind, that is, Dr. Manmohan Singh. He was the finance minister in the 1990s when globalization was fully implemented and experienced in India. He was the front man who framed the economic liberalization proposal. Since then, the nation has gradually moved ahead to become one of the supreme economic leaders in the world.

Below mentioned are some of the quick reactions which were felt after the introduction of globalization:

- After 1991, the rise in GDP that dropped to 13% in 1991-92 extended momentum in the following five years (1992-2001). Moreover, the annual average rate of growth in GDP was recorded to be 6.1%.
- Furthermore, export growth skyrocketed to 20% in 1993-94. For 1994-95, the figures were recorded to be 18.4 per cent. Export growth statistics in recent years have been very impressive.

Indian economy had experienced major policy changes in early 1990s. The new economic reform, popularly known as, **Liberalization, Privatization and Globalization** (LPG model) aimed at making the Indian economy as fastest growing economy and globally competitive. The series of reforms undertaken with respect to industrial sector, trade as well as financial sector aimed at making the economy more efficient.

With the onset of reforms to liberalize the Indian economy in July of 1991, a new chapter has dawned for India and her billion plus population. This period of economic transition has had a tremendous impact on the overall economic development of almost all major sectors of the economy, and its effects over the last decade can hardly be overlooked. Besides, it also marks the advent of the real integration of the Indian economy into the global economy.

This era of reforms has also ushered in a remarkable change in the Indian mindset, as it deviates from the traditional values held since Independence in 1947, such as self reliance and socialistic policies of economic development, which mainly due to the inward looking restrictive form of governance, resulted in the isolation, overall backwardness and inefficiency of the economy,
amongst a host of other problems. This despite the fact that India has always had the potential to be on the fast track to prosperity.

Now that India is in the process of restructuring her economy, with aspirations of elevating herself from her present desolate position in the world, the need to speed up her economic development is even more imperative. And having witnessed the positive role that Foreign Direct Investment (FDI) has played in the rapid economic growth of most of the Southeast Asian countries and most notably China, India has embarked on an ambitious plan to emulate the successes of her neighbors to the east and is trying to sell herself as a safe and profitable destination for FDI.

Globalization has many meanings depending on the context and on the person who is talking about. Though the precise definition of globalization is still unavailable a few definitions are worth viewing, Guy Brainbant: says that the process of globalization not only includes opening up of world trade, development of advanced means of communication, internationalization of financial markets, growing importance of MNCs, population migrations and more generally increased mobility of persons, goods, capital, data and ideas but also infections, diseases and pollution. The term globalization refers to the integration of economies of the world through uninhibited trade and financial flows, as also through mutual exchange of technology and knowledge. Ideally, it also contains free inter-country movement of labor. In context to India, this implies opening up the economy to foreign direct investment by providing facilities to foreign companies to invest in different fields of economic activity in India, removing constraints and obstacles to the entry of MNCs in India, allowing Indian companies to enter into foreign collaborations and also encouraging them to set up joint ventures abroad; carrying out massive import liberalization programs by switching over from quantitative restrictions to tariffs and import duties, therefore globalization has been identified with the policy reforms of 1991 in India.

If the 19th century can be characterized by the rise of industrialization and the 20th century by the expansion of the market economy and globalization, the defining characteristics of the 21st century are dramatic and pervasive transformations and a shift from unipolarity towards multipolarity.

Triggered by disruptive technological change, the onset of the Fourth Industrial Revolution has led to fundamental changes in the nature and structure of the economy. With significant redistribution of the level, location and composition of output, our organizations are more global and interconnected than ever. A hastening erosion of trust in extant political frameworks and institutions is driving human societies to be more isolated and divergent. Concurrently, the ecological challenges and climate crisis have never been more existential. In a nutshell, in a fragile world order, the need for a cohesive leadership arrangement to drive positive change is conspicuous in its absence.
At the same time as these grave geopolitical and ecological struggles, escalating trade tensions and policy uncertainty have led to a slowdown in investments and business confidence. With global GDP growth in 2019 downgraded to 3.2% with only a modest recovery projected for the next few years and credibility in the existing multilateral rules-based trade system waning, the prospects are worrisome. In fact, with the increasingly strong probability of global growth falling short by at least 1 percentage point from projections, the magnitude of the decline is comparable to the agonizing global recession of the early 2000s.

By contrast, the economic outlook for South Asia continues to be strong. In the past half-century, emerging and developing economies have significantly enhanced their contribution to global output from around 15% to well above 50%. Underpinned by strong domestic demand, private consumption and investment, a growth projection of 7% suggests South Asia’s resilience and strength to not only weather the global slowdown but also to contribute to propelling global growth forward.

Especially noteworthy is the economic outlook of the region’s largest economy, India. With its GDP growth projected to again increase by 7.5% in the next few years, India continues to be one of the world’s fastest-growing major economies. India’s has been a dramatic rise, deserving of the global attention that it has commanded. The stage is set for India to realize its vision of becoming a $10-trillion economy in the next decade-and-a-half and to assist in appeasing the woes besetting the world economy.

Steered by decisive leadership, India is rising to the occasion through a significantly enlarged global profile. India’s commitment to renewable energy through voluntary and ambitious renewable power capacity targets, a lead role in the Paris Climate Agreement negotiations and the International Solar Alliance shows its aspirations of becoming a leader in environment security and climate change mitigation.

India has also expanded its global stature in space exploration through widely celebrated breakthroughs such as its recent lunar mission and its distinction of becoming the fourth country worldwide to shoot down a low-orbit satellite with a missile. India, too, is more involved in global humanitarian efforts and development initiatives, including infrastructure development in Afghanistan, the International North-South Transport Corridor, the Ashgabat Agreement, the Cahaba port and the India-Myanmar-Thailand highway. The Indian Prime Minister has articulated his strong vision for an India-Africa cooperative interest and India’s deepened participation in coalitions such as the Shanghai Cooperation Organization, the Asian Infrastructure Investment Bank, the India-Brazil-South Africa Dialogue Forum and the BRICS group demonstrates its growing global influence and appetite for enhanced visibility on a range of global initiatives and multilateral fore.
With half of its population of working age, India has a unique demographic advantage. Climbing to 52nd spot in this year’s *Global Innovation Index*, India is one of the few countries to have consecutively improved its rank for nine years. Its distinctive demographic advantage, technical prowess and knack for innovation, fused with the leap-fogging opportunities of Fourth Industrial Revolution technologies, can consolidate its position as a dominant force in global economic, political and strategic affairs.

Simultaneously aware that the quest for becoming a great power must begin at home, India has undertaken groundbreaking structural reforms mirroring its growth ambitions and development priorities. Initiatives aimed at revamping India’s restrictive business regulations have already borne fruit. India’s 65-place leap in the World Bank’s Ease of Doing Business rankings demonstrates an improved business climate and expounded investor confidence.

In the past decade, India has witnessed a mushrooming of start-ups, innovating across domains such as digital payments, online retail, education and software. The number of Indian unicorns has also risen every year. Furthermore, in the biggest liberalization to occur in single-brand retail in the past decade, the government has recently permitted retailers to sell goods online to Indian consumers before opening brick-and-mortar stores, significantly expanding the domestic market for global players. In addition, the implementation of the Goods and Services Tax has removed tax barriers across states and unified various central and state tax laws, creating a single common market.

Committed to ensuring that its economic achievements correspond with inclusive development, India has also made big strides in social progress. The expansion of the biometric identification system under the Unique Identification Authority of India has streamlined the delivery of government services and made resource disbursement through welfare programmes more efficient. Devising such a database of more than a billion people is no mean feat. In addition, through the financial inclusion programmes Jan Dhan Yojana, it has provided bank accounts for 300 million
hitherto unbanked people, creating new opportunities for them to access credit and state subsidies and bringing them into the formal economy.

Initiatives such as the Ayushman Bharat for universal health coverage in India, the world’s largest programmer to improve energy efficiency, a sweeping rural electrification drive and a strong push towards broad-based energy access and security through the Ujjwala and Saubhagyapha schemes, among others, show India’s ability to devise and implement a reform agenda that balances global aspirations with critical development imperatives at home.

Looking ahead, India must continue on its journey toward holistic structural reforms that are conducive to boosting the sustainability and resilience of its economy, while also ensuring that the progress reaches a broad base. It is important that India arms itself with modern infrastructure, social services and the connectivity becoming of a developed economy. It must simultaneously create jobs, wealth and value to accommodate the aspirations of a young and upwardly mobile population and to help eradicate poverty. Policy solutions inspired by a vision of a regenerative, inclusive and sustainable economy will ensure that the milestone of a $10-trillion economy coincides with a stronger India at the global, national and grassroots level, with ameliorated living outcomes for all.

Achieving that scale of change in a country with more than 1.3 billion people who speak dozens of different languages and dialects and have different customs and cultural practices is monumental. But with its geographic and demographic size and extensive diversity, India has a unique opportunity to shape global agendas. It can establish itself as a role model and inspiration for the world through its response to these opportunities, with a resounding impact on our collective future. India can tap its own sphere of influence and emerge as a global leader by providing the world with replicable and scalable models for solutions to critical global challenges.

**Increase in Foreign Trade:**

As a result of foreign trade policies adopted in the wake of globalization, India’s share in the world trade has gone up.

<table>
<thead>
<tr>
<th>Year</th>
<th>India’s percentage share in world trade</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990-91</td>
<td>0.53</td>
</tr>
<tr>
<td>1995-96</td>
<td>0.60</td>
</tr>
<tr>
<td>2005-6</td>
<td>1.00</td>
</tr>
<tr>
<td>2007-08</td>
<td>1.64</td>
</tr>
<tr>
<td>2008-09</td>
<td>1.64</td>
</tr>
<tr>
<td>2009-10</td>
<td>1.78</td>
</tr>
<tr>
<td>2014-15</td>
<td>1.96</td>
</tr>
</tbody>
</table>

Above table shows that as a result of globalization of India’s foreign trade there has been some increase in India’s share in world trade. In 1990-91 India’s share in world trade was 0.53 percent. In 1995-96 it rose to 0.60% in 2009-10 increase to 1.78 and in 2010-11 it farther increased to 1.96 percent. Share of India’s GDP has been constantly rising. In 1990-91 it was 6 percent of GDP that rose to 23.39 percent in 2014-15.

**Increase in Foreign investment:**

As a consequence of globalization in forging investment policy 1991, our govt. started encouraging the entry of foreign investment; there has been a considerable increase in foreign direct investment as well as foreign portfolio investment.

The above data reflects that there is significantly increase in foreign investment in India. In the year 1990-91, to foreign investment (FDI and Porto) was US $ 103 million. In the year 2007-08, amount of foreign investment increase to US $ 62,106 in 2009-10 and 2014-15 in inflow of foreign investment has increase to US $ 70,139 and 64,372 million respectively.

Increase in Foreign Exchange Reserves: as a result of globalization of Indian. In the year 1991, foreign exchange reserves of India amounted to Rs 4,388 crore which in April, 2012 increased to Rs. 15,24,328 crore (US $ 293.14 billion). Thus, there has been an increase of 347 times in foreign exchange reserves of India.

**Increase in Foreign Collaborations:**

Globalization has promoted collaboration of foreign companies with many Indian companies. These collaboration agreements can be technical. Financial or both.

**Expansion of Market:**

Globalization has expanded the size of market, it has permitted Indian business unit to expand their business in the whole world. Now multinational corporations, have no national boundaries. Indian companies like Infosys, Tata consultancy, Wipro, Tata Steel, reliance etc, are doing their business in many countries of the world.

**Technological Development:**

Globalization has promoted the technical collaboration of foreign companies. This collaboration enabled the inflow of modern advanced and superior foreign technology in India. Now Indian business units use this modern technology. It has resulted technological development of Indian business units. Brand Development: - Globalization has promoted the use of branded goods. Now not only durable goods are branded but products like garments, Juices, Snacks, food grains etc. are also branded. Brand development has led to quality improvement.
Development of Capital Market:

Globalization has helped in Indian capital market development now many foreign investors invest in Indian capital market recently there has been substantial increase in inflow of foreign direct investment and portfolio investment.

Increase in Employment:

As a result of Globalization foreign companies are establishing their production and trading units in India. It has increased employment opportunities for Indian. E.g. many Indian’s are employed in foreign insurance companies, mobile companies etc.

Reduction in brain Drain:

As a result of globalization, many multinational corporations have set up their business units in India. These MNCs provide attractive salary package and good working conditions to efficient, Skilled Indian get good employment opportunities in India. It has resulted in reduction in brain-drain.

Negative Effect of Globalization:

Following observation highlight the negative effect of globalization policy on the Indian economy:

Loss of Domestic industries:

As a result of Globalization foreign competition has increased in India. Because of better quality and low cost of foreign goods, many Indian industrial units have failed to face competition and have been closed.

Problem of Unemployment:

As a result of globalization foreign companies or even some Indian companies use capital intensive technology. With the increasing use of capital intensive technology the employment opportunities are reduced and increase the problem of unemployment in Indian economy.

Exploitation of Labour:

Globalization is exploiting unskilled workers by giving lower wages, less job security long working hours and worse working condition.

Increase in Inequalities:

Globalization has benefited MNCs and big industrial units but small and cottage industries are adversely hit by it. It has increased inequalities in India.

Bad Effect on Culture and Value System:

Many global companies sell such products as distort our culture and value system. The vulgar advertisements shown by some MNCs pollute the thinking of young generation in India.
BENEFITS OF GLOBALIZATION IMPACTING INDIA:

Rise in Employment:

With the opening of SEZs or Special Economic Zones, the availability of new jobs has been quite effective. Furthermore, Export Processing Zones or EPZs are also established employing thousands of people. Another factor is cheap labour in India. This has motivated big firms in the west to outsource work to companies present in this region. All these factors are causing more employment.

Surge in Compensation:

After the outburst of globalization, the compensation levels have stayed higher. These figures are impressive as compared to what domestic companies might have presented. Why? The level of knowledge and skill brought by foreign companies is obviously advanced. This has ultimately resulted in modification of the management structure.

Improved Standard of Living and Better Purchasing Power:

Wealth generation across Indian cities has enhanced since globalization has fully hit the nation. You can notice an improvement in the purchasing power for individuals, especially those working under foreign organizations. Further, domestic organizations are motivated to present higher rewards to their employees. Therefore, a number of cities are experiencing better standards of living together with business development.

Disadvantages of Globalization in India:

If we are discussing globalization and the Indian economy, then talking about the negative effects is also important. The informal sector is purposely not listed in the labor legislation. For example, informal workers aren’t the subject considering the 1948 Factories Act. This scheme covers vital factors such as common working conditions, safety, and health, the ban on child labor, working hours etc. Also, globalization has caused poor health, disgraceful working conditions, as well as bondage, happening in different parts of the country.

CONCLUSION:

On the basis of above study we can say that globalization is not a free lunch as an outward looking. It is a mixed bag of success and failures. Having gone through positive and negative effect of globalization of we can say that it is not equally beneficial for all countries of the world. So we need a policy of globalization which is beneficial, creates opportunities with the objective of growth, employment and equity and raise the welfare of all people throughout the world. Government should adopt measures to ensure fair globalization policy.
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CONCEPT OF ASRIGDARA AS PER AYURVEDIC CLASSICS

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ABSTRACT

Asrigdara is a common ailment among 30% of the female population in reproductive age group. It is a Sanskrit word which literally means bleeding from vagina during menses or intermenstrual period in amount or duration or both. This can be better understand with condition called menorrhagia in modern science. Menorrhagia is characterized by cyclic bleeding in excessive amount or duration or both. Backache, pain in lower abdomen and weakness are also present in this disease. All the gynecological disorders come under the heading of Yonivyapad in Ayurvedic classics. Most of the Yonivyapad have characteristic features of menorrhagia such as Raktayoni, Rudhirkashara, Putragnhi, Apraja etc. Among Ashta-artavadushti, Raktaja artava-dushti menorrhagia is also found as prominent symptom. Since, Asrigdar is mainly due to vitiation of Vata and Pitta dosha hence, the treatment should be based on the use of drugs which are having predominance of Kashaya rasa and Pitta –shamak properties. Kashaya rasa is known as best astringent and because of this property Kashaya rasa plays important role in relieving bleeding discharge due its Stambhana action. There is loss of blood, so, the drugs and diet which increases Rakta dhatu (Blood) in body are also effective. Therefore, treatment mainly based on concept of Raktastambhaka as well as Raktavardhaka.

Keywords: Asrigdara, Ayurveda, Chikitsa, Menorrhagia.

INTRODUCTION

Asrigdara is made up of two words i. e. asrik and dara. Asrik means rakta/raja and dara means continuous/excessive flow. Due to Pradirana of excessive Raja is also termed as Raktapradara[1]. In Modern it is correlated with menorrhagia. It is defined as cyclic bleeding at normal intervals, the bleeding is either excessive in amount (>80ml) or duration (>7days) or both[2]. It is common problem among women in the reproductive age. Excessive menstrual blood loss interferes with the woman’s physical emotional social and psychological quality of life. In India reported prevalence of menorrhagia is around 17.9% [3]. Menorrhagia can occur due to many...
reasons, including menstrual cycle, emotional stress, nutritional status, infection, pregnancy, usage of medications - including birth control pills, and sexual arousal.

The word Asrigdar has described in Brihatrayee i.e. Charaka Samhita, Sushruta Samhita, Astanga Hridaya and Astanga Sangraha. For excessive bleeding per vaginum, the word Asrigdar has described in Sharangadhara Samhita, Bhava Prakash, Yoga Ratanakara and in commentary on Charaka Samhita by Chakrapani. According to charaka, the disease in which there is excessive flow of raja is called asrigdara[4]. According to sushrut profuse and/or prolonged menstruation during menstrual and/or inter menstrual period and different from the features of normal menstrual blood is known as asrigdara. Acharya sushrut and madhav have mentioned angamard, vedana, weakness, giddiness, mental confusion, feeling of darkness, dyspnea, thirst, burning sensation, delirium, anemia, drowsiness and convulsion, disorders of vata are symptoms associated with excessive bleeding[5].

Asrigdara (Menorrhagia) may present as a symptom of so many diseases. Sometimes this symptom becomes so severe and it overshadows the other symptoms of actual disease and patients come to O.P.D. for the treatment of only this symptom. As in modern medicine haemostatic, analgesic and hormonal therapies are advised for menorrhagia, which has limitations. Hence it is need of time to have an integrated and comprehensive therapeutic intervention in Ayurveda to prevent recurrence. Sodhana and Shamana therapies are advised but if Rugnabala is diminished then only Shamana is advisable. Many herbal and herbomineral preparations are mentioned in Ayurveda to cure Asirgdara and related symptom which can be used as per Anubandha Dosha and Lakshana.

**NIDANA  (CAUSES)[6]**

Nidanas that causes vitiation of Doshash and result Asrigdara comes under following category -

1) aharaja ( related to diet )
2) viharaja ( related to life style )
3) manasika ( related to psychology )
4) anya ( other causes )

1) **Causes related to diet** : the etiological factors related with dietary condition are over indulgence of ruksha, sheeta etc. diets provokes vata; amla(sour) , ushna(hot), tikshna(pungent) etc. provokes pitta & guru(heavy), madhura(sweet), Snigdha(oily) etc. provokes kapha dosha.
2) Causes related to life style: Atimaithuna, Atiyanavarohana, Atimargagamana, Atibharavahana, Atidivaswapana

3) Causes related to psychology: Atishoka, Atisantapa, Adhayana.

4) Other causes: Garbhapata, Abhighata.

**SAMPRAPTI (PATHOPHYSIOLOGY) [7]**

Good understanding of pathogenesis (Samprapti) is very essential for early diagnosis, prognosis and for adopting preventive and treatment measures. Samprapti is the process of manifestation of the disease. Samprapti is the procedure in which the dosha get vitiated and the way in which they manifest the disease. As per Ayurveda Samprapti of Asrigadara, the woman who consumes excessive salty, sour, hot, vidahi (producing burning sensation) and unctuous substance, meat of domestic, aquatic and fatty animals, Krishara (made up with rice and pulses) payasa (rice cooked with milk and sweetened) curd, shukta (vinegar), mastu (curd water) and vine, her aggravated vayu, with holding rakta (blood) which get vitiated due to above cause, increases its amount and then reaching raja carrying vessels (branches of ovarian and uterine arteries) of the uterus, increases immediately the amount of raja (Artava or menstrual blood) in other words the increase in amount of raja is due to its mixture with increase blood. This increase in menstrual blood is due to relative more increase of rasa, in this condition, excessive blood is discharged hence it is known as pradara.

Development of Asrigdara can be summarise as, because of various causative factors tridoshas get vitiated and leads to Agni mandya which leads to rasagani vaishamya and this again leads vikrita rasa dhatu formation. Hence, the artava i.e. upadhatu of rasa also get vitiated and rakta, due to its rasabhavata gets vitiated and increase in amount by the pitta prakopak nidansevan, the rasa and dravaguna of pitta get vitiated. These factors affects the uterine vascular apparatus leading to uterine congestion and increasing uterine circulation along with this pittavritaapanavayu and its chalaguna leads to excessive and irregular bleeding which is termed as „Asrigdara’.

**SAMANYA LAKSHANA**

Charaka says that excessive vaginal bleeding during menstruation is the only symptom of Asrigdara[8]. According to Sushruta Samhita, there are body ache and pain symptoms present in all types of Asrigdara with excessive vaginal bleeding[9]. Dalhana says in his commentary on Sushruta Samhita that burning sensation in lower portion of groin, pelvic region, back, renal region and flanks and severe pain in uterus as symptoms present in Asrigdara[10]. Vriddha Vagbhata has described
excessive bleeding during menstrual or intermenstrual period as symptom of Asrigdara[11]. Bhava Prakash, Madhava Nidana, and Yoga Ratnakar have described the same as in Sushruta Samhita i.e. body ache and pain in Asrigdara.

CLASSIFICATION

Acharya Charaka has described four types of Asrigdara i.e. Vataja, Pittaja, Kaphaja and Sannipataja Asrigdara[12]. Acharya Sushruta has mentioned ‘all types of Asrigdara’ along with general clinical features of Asrigdara but has not described any classification[13]. Most of Acharyas have mentioned four types of Asrigdara in their texts.

Clinical features of Asrigdara according to dosha:

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Vataja</th>
<th>Pittaja</th>
<th>Kaphaja</th>
<th>Sannipataya</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of flow</td>
<td>Alpam</td>
<td>Nitanta Raktam</td>
<td>Bahalm</td>
<td></td>
</tr>
<tr>
<td>Colour</td>
<td>Kinshukodak, Krishna, Aruna</td>
<td>Neela, Pita, Krishna</td>
<td>Pandu</td>
<td>Sarpimajja, Vasopama</td>
</tr>
<tr>
<td>Smell</td>
<td>Lohgandha</td>
<td>Visra, Mastyagandha</td>
<td>Vasagandha</td>
<td>Durgandh</td>
</tr>
<tr>
<td>Consistency</td>
<td>Phenila, Tanu, Ruksa</td>
<td>Snigdha</td>
<td>Guru, Ghan Pichhila</td>
<td>Pichhilam</td>
</tr>
<tr>
<td>Nature</td>
<td>Askandi</td>
<td>Askandi, Madhu</td>
<td>Tantumatva</td>
<td>Bahuvega</td>
</tr>
<tr>
<td>Pain</td>
<td>Saruja/Niruja</td>
<td>Pittari</td>
<td>Mandarujakaram</td>
<td></td>
</tr>
<tr>
<td>Temperature of Discharge</td>
<td>Sheeta</td>
<td>Atiushnam</td>
<td>Sheetalam</td>
<td></td>
</tr>
<tr>
<td>Associated Symptoms</td>
<td>Kati Vankshanam, Hritsparsa, Shronishshula</td>
<td>Daha, Trishna, Moha, Jwara, Bhrama</td>
<td>Chhardi, Arochak, Hrillas, Shwas, Kasa</td>
<td>Daha, Trishna, Jwara, Durbala Ksheenrakta,</td>
</tr>
</tbody>
</table>

UPADRAVA (COMPLICATIONS):

Acharya Sushruta and Madhava Nidana etc. have mentioned weakness, giddiness, mental confusion, feeling of darkness, dyspnea, thirst, burning sensation, delirium, anemia, drowsiness and convulsion etc. disorders of Vata as complication of excessive bleeding [14].

Acharya Charaka and Vagbhata havementioned edema as a complication. The Asadhya Lakshana indicates the severity and chronicity of the disease. Chronicity of a disease, weakness, decreased body resistance the body resistance renders the disease incurable.

- Loss of body resistance together with the weakness due to continuous and excessive loss of blood gives a bad prognosis to the disease.
• Bhrama, Murcha etc. are due to cerebral hypoxia resulting from the reduced oxygen carrying capacity of blood.
• Dourbalya is the result of Raktakshaya. Rakta gives Jivana to body; loss of it’s naturally leads to Dourbalya or weakness.
• Trishna results from the Rasakshaya i.e. the loss of fluids from the body.
• Excessive loss of blood from the body causes pallor-Panduta.

CHIKITSA (TREATMENT)

Treatment of Asrigdara has described under following headings:
1. Principles of treatment
2. General treatment
3. Specific treatment according to Doshas.

Principles of Treatment/Line of Treatment
1. Use of treatment that is described for Raktayoni i.e., use of haemostatic drugs according to Doshas diagnosed on basis of color and smell of blood[15,16,17].
2. Use of treatment described in Yonivyapada chapter according to respective Dosha[18].
4. Guhyaroga (diseases of reproductive system) [20] and abortions [21] should be used.
5. An young woman, using congenital diet, having less complication should be treated on the of Adhogaraktapitta [19].
6. To cure Asrigdara, Basti should be used[22,23].
7. Purigation cures Asrigdara or any other menstrual disorders[24].

General Treatment

General treatment consists of external/local and internal/systemic both i.e. some remedies are effective by their local application to cure Asrigdara and some are beneficial to treat the disease by their internal i.e. oral use. Both of these i.e. external and internal medicines are broadly described in detail under different headings and given below:

Drugs For External/Local Use
1. Uprooted the root of Vyaghranakhi which is situated in north direction and sacred place during Uttarphalguni Nakshatra and tied in the waist of patient. This can cure Raktapradar [25,26].
2. Inhalation and massage of Shatapuspa oil are also beneficial in Asrigdara[27].

3. Use of Uttarbasti is also beneficial [28,29,30]. In Asrigdara, Chandanadi Niruhabasti, Rasnadi Niruhabasti, Madhukadi Anuvasanabasti, Kushadi Asthapanabasti, Rodhradi Asthapanabasti, Rasnadi Asthapanabasti and Mustadi Yapanabasti are used in Asrigdara.

Drugs for internal/oral use

2. Vati Kalpana (Tablets): Gokshuradi Guggulu, [33] Chandraprabha Vati [34]
8. Kalka and Churna Kalpana: Pestled root of Tanduliyaka[43] with honey, Rasanjana and honey (mixture) should be taken with rice-water, Pushyanuga Churna, Powder of Indrayava and sugar taken with overnight kept water.
10. Bhumyamalaki Churna: Bhumyamalaki is having an astringent property that’s why it improve the uterine tonicity. It is Sheeta virya which helped in reducing blood flow and acted as Pitta shamaka and Deepana-pachana property corrects the metabolic disorders of body and balances hormonal disturbances [44].
11. Bolbadhha rasa: with madhu as anupana acts as pitta shamaka, vatanulomaka, raktsthapka and deepan pachana [45].

12. Shodhana with Virechna karma: Ayurvedic management is a good alternative to Hormonal therapy as it has no side effects with minimal recurrence rate. Once, Shodhana is done there is less chance of recurrence of the disease. As, vitiation of Pitta dosha is there in Raktapradra so, Virechna karma was advocated according to the general condition of the patient. Moreover, Kashyapa has quoted that purgation cures menstrual bleeding [46].
DISCUSSION

Shudha artava is one of the most important factor for the healthy progeny. Asrgdara is Sanskrit word which means excessive bleeding from uterus during menses or intermenstrual. It can be correlate with menorrhagia. Prophylaxis of Asrgdara is possible only due the avoidance of all etiological factors causing Raktapradara. As it is characterized by excessive flow of blood out of the body and blood (rakta) is known to be as vital (Jeeva) its Chikitsa becomes very important. Different type of Samprapti, Dosanubandha and Anubandhita Lakshana are seen in every patient of Asrgdara. So the treatment should be depends on the basis of Doshanubandha and Samprapti Vighatana that is Avasthika Chikitsa. The drugs and formulations used in treatment of Asrgdara are mainly rich in Kashaya rasa and Tikta rasa because both of these rasa have the property of astringent i.e. Stambhana guna in Ayurveda and thus due to astringent property, bleeding will be checked. Then next aim of treatment should be rising of blood i.e. hemoglobin label in body and for that, Raktasthapana drugs should be used. Maharshi Kashyapa has described use of purgation (Virechana) in treatment of Asrgdara because Virechana is most appropriate and superior therapy among Panchkarma for Pitta dosha and Raka dosha have quality identical to Pitta dosha, hence Virechana therapy will be also effective to treat the disease originated due to vitiation of Rakta dosha. Bhava prakash, Yoga Ratnakar, Charaka Samhita, Sushruta Samhita and other Ayurvedic classics have described formulations of Prameha rogadhikar are very effective in Pradara roga.

CONCLUSION

Asrgdara is a common Artavvikara, characterized by excessive uterine bleeding with complications. Modern treatment with analgesics and hormonal therapy has limitations, side effects and which also leads to the recurrence of disease. According to Ayurveda classics treatment is mainly based on the use of drugs which are having predominance of Kashaya rasa and Rakta-pitta vardhak properties. Balya Chikitsa also play important role to prevent the incidence and to treat the present disease.

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DUTIES OF REGISTERED MEDICAL PRACTITIONER (RMP) IN CASE OF SUSPECTED POISONING - A REVIEW

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ABSTRACT: Registered medical practitioner (RMP) whenever encountered with the poisoning cases there is possibility of lack of patient care due to fear or inadequate knowledge of medico-legal case. The duty of RMP is increased in case of poisoning as it is a medical emergency along with the legal issues associated with it. He should have knowledge regarding the treatment protocol such as first aid, removal of unabsorbed poison, elimination of absorbed poison, antidote administration, preservation of biological material and supportive care. After that he should prepare legal documents which should be clear and precise. Further information to police authority should be given whenever necessary. The RMP is duty bound to all legal and ethical work related to a poisoning case otherwise liable for punishment as per the law. This paper imparts the role of doctor as a medical person as well as medico-legal person in case of suspected poisoning.

Keywords: Duties of RMP, poisoning case management, legal formalities

INTRODUCTION:

In India, suicidal poisoning cases are more common than western countries due to easy availability of poisonous substances on account of lack of strict application of the law. Accidental poisoning is also common because of the greater use of chemicals for agriculture and domestic purposes. Accidental cases of bites by venomous snakes are frequent in India. Suicidal cases are increasing because of tension and worry in today's fast life. Because of overuse of Organophosphorous compounds as insecticides, pesticides, industrial chemicals and drugs in Agro industry, the misuse of poisonous substances is increasing in our country."¹"

Review of Literature:

Poisoning both accidental and intentional is a significant contributor to mortality and morbidity throughout the world. According to WHO, 3 million acute poisoning cases with 220,000 deaths occur annually of these 90% of fatal poisoning occur in developing countries particularly among agricultural workers."²" Acute poisoning forms one of the commonest causes of emergency hospital admissions. Pattern of poisoning in a region depends upon a variety of factors such as, availability of poisons, socio-economic status of population, religious and cultural influences and availability of drugs."³" The exact incidence of poisoning in India is uncertain due to lack of data at central level as most cases are not reported moreover mortality data is a poor indicator of incidence of poisoning. It has been estimated that about 5-6 people per lakh population die due to rage of...
poisoning every year. In India, the common poisons are insecticides, pesticides such as Organo phosphorous, chlorinated hydro carbons, Aluminium phosphide, carbamates and pyrethroid. The commonest cause of poisoning in India and other developing countries is pesticides; the reasons being agriculture based economic, poverty and easy availability of highly toxic pesticides. Occupational poisoning due to pesticides is also common in developing countries, due to unsafe practices, illiteracy, ignorance, lack of protective clothing. As these cases of poisoning are brought to the nearest available hospital, so the doctors on duty should equip himself with the proper infrastructure and management skill in saving the life of these patients or after stabilizing them by giving them first aid. Then these cases should be referred to higher centers for further management. Though medical treatment in such cases is important but the legal duties cannot be undermined. In all such cases of poisoning what a registered medical practitioner should do both clinically as well as legally in managing such cases and following points must be kept in mind while treating these cases at clinic level or hospital.

Duties of doctor (medical and legal):

1. The most important duty is care and treatment of the patient to save his life. A medical practitioner must be very cautious in giving his opinion about poisoning. On mere suspicion; he should never give a verbal or a written opinion until and unless he is sure about the case.
2. Stoppage of further poisoning by transferring the patient to nearest hospital.
3. Assist the police to determine the manner of death.
4. Note the preliminary particulars of the patient i.e. Name, age, sex, occupation, address, date and time, brought by whom, identification marks and history.
5. A doctor in the Government hospital is bound to inform the police officer about each and every case of poisoning irrespective of suicidal, homicidal or accidental. However, if a medical practitioner in private practice is convinced that the patient upon whom he is attending is suffering from homicidal poisoning he is bound under section 39 Cr PC to communicate it to the nearest police officer or Magistrate. Non compliance is punishable under section 176 IPC with simple imprisonment for a term which may extend to 6 month or with fine which may extend to one thousand rupees, or with both. He is not liable for giving notice if case has already been registered with police officer by village head or watchman u/s 40 Cr PC. A private medical practitioner is not bound to supply information to police officer or magistrate on his own, if he is sure that his patient is suffering from suicidal or accidental poisoning because sec.309 IPC is not included in the section of IPC for which information is to be given under 39 Cr PC. But he has to give information about the case if he is summoned u/s 175 Cr PC. If he conceals any information he is liable for prosecution u/s 202 IPC, which
may be simple imprisonment for a term which may extend to six months or with fine or with both. If he supplies false information in any stage of judicial proceeding, he can be prosecuted u/s 193IPC with simple imprisonment for a term which may extend to 7 years and also be liable to fine.\(^3\), \(^8\), \(^{13}\)

6. In homicidal poisoning cases it is always advisable to call in 1 or 2 colleagues in consultation and to have the patient removed to the hospital, where the doctor in charge should be informed of the suspicion, so that he would not allow anyone except hospital nurse to administer the medication and nourishment. If the patient cannot be removed to the hospital and if he can afford the expenses, employment of two trained and trustworthy nurses to take charge of the patient in his house and also preparation and administration of food and medicine for day and night will be a safeguard against further administration of poison. If that is not possible, the only alternative left for a medical practitioner is to take some near relative or friend in his confidence and inform him of his suspicion. The patient may also be warned against the danger, if he is an adult and in full senses\(^2\).

7. It is advisable to maintain a proper written record of his findings and treatment administered, this is useful to the physician in the court as well. In a suspicious case of acute poisoning, the medical practitioner must try to find out the nature of suspected poison, so that he can at once administer the appropriate treatment and save patient's life. In a case where he suspects slow poisoning by administration of small doses at varying intervals, he should make a very careful note of all the symptoms exhibited by the patient.\(^5\)

8. In every case of suspected poisoning a medical practitioner whether in private practice or governmentservice, must preserve all the evidence such as vomited matter, stomach wash contents and samples of urine or stool passed in his presence and likely to contain poison and suspected articles of food or drink or medication in separate wide mouthed glass bottles with glass stoppers tightly fitted. These should be properly labeled with name of patient, material preserved and date of examination. This bottle should be kept under strict lock and key in his own custody till transferred to chemical examiner for chemical examination.\(^6\), \(^7\), \(^9\)

9. A medical practitioner must also preserve any other evidence of suspected poisoning like bottle, cup, tumbler, piece of paper used for wrapping and dispensing the poison. If he fails to do the same he may be charged u/s 201IPC for disappearance of evidence to protect the accused.\(^6\), \(^7\), \(^9\)

10. The punishment in this sec. is variable according to the nature of offence. If the offence is committed is punishable with death then he may punished with imprisonment for a term which may extend to 7 years and also be liable to fine, and if the offence is committed is
punishable with imprisonment for life or with imprisonment which may extend to ten years, shall be punished with imprisonment a term which may extend to three years, and shall be liable to fine. The punishment for the offence which is punishable with imprisonment for any term not exceeding to ten years, shall be punished with imprisonment for a term which may extend to one fourth part of the longest term of imprisonment provided for the offence, or with fine or with both. \[7\][8][11]

11. If the condition of the patient is serious, he must arrange to record the dying declaration as per the laid down rules.

12. If the patient dies, he should not issue a death certificate, but he should inform the police and hand over the body to the police officer for further investigation.

13. In case of food poisoning originating from public eatery (canteen, cafe, hotel etc.), public health authorities must be notified \[8\]

CONCLUSION AND SUMMARY:

- The doctor in cases of suspected poisoning should not refuse to treat the case due to fear of legality.
- He should treat the patient efficiently and adhere to the other legal duties like removal of the patient from the source of poisoning, proper collection of the material for analysis, reporting the matter to police officer or magistrate where required, recording of dying declaration if needed, if the person dies, then handing over the dead body to police for further investigation in the event of death without issuing death certificate.
- By performing his duties both medical and legal, the doctor not only helps the patient but also helps the society at large.

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MANAGEMENT OF DYSMENOR-RHOEA WITH SUKUMAR GHrita MATRA VASTI-A CASE REPORT

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Abstract:
In present day life women are effectively facing challenges encountered by stressful life resulting in Mithya Ahar, vihar, over exertion & malnutrition this may direct to vikruti in “Rutuchakra” leading to various vyadhi allied to menstruation. Ayurveda recommends rutucharya and dinacharya, diet modulation and yoga in the form of asanas, pranayam and meditation on a regular basis so as to alleviate dysmenorrhoea effectively. Similarly, Uttarbasti, Garbhashaya balyaushadhi, anuvasan or matra basti can also be administered if necessary.

Apathya Sevana & Vegadharana causes vitiation of Vata & its Pratiloma Gati results into cramping type of lower abdominal pain which gets relieved with expulsion of Raja (menstrual flow). Along with the Katishula is also the symptom by which many women are suffering. Patients of Dysmenorrhoea widely uses analgesics, antispasmodic, prostaglandin inhibitors any many more medicines which later on arises lot of adverse effects. Our treatise has mentioned Shamana & Shodhana Chikitsa to treat this. Panchakarma have ray of hope to this to treat & that Shamana & Shodhana Chikitsa in it so matra basti treatment was given. Ayurveda has lot of treatments for this which are easy to take & also cost effective. Shodhana Chikitsa is always better than Shamana because it works on the root cause of the disease.

Vasti treatment is mentioned as the best treatment for menstrual disorders of women in Ayurvedic literature. This study was designed to find out the clinical effect of Vasti treatment in the management of some menstrual disorders including Hypomenorrhoea, Oligomenorrhoea and Dysmenorrhoea. In Ayurveda this condition can be correlated to udavarta yoni vyapath with vitiation of vata dosha. The present case report documents, a 26 year old unmarried female of primary dysmenorrhoea, managed with sukumara ghrita matravasti.

Key words: primary dysmenorrhoea, udavarta, matravasti.

Introduction:

Dysmenorrhea is one of the most common and debilitating conditions in women’s life, which affect their normal day to day activities. A survey study conducted in India reported that 79.67% of women are affected, of them 37% suffers from severe dysmenorrhea. Dysmenorrhea literally means painful menstruation. It can be broadly classified into two- primary and secondary dysmenorrhea.
Primary dysmenorrhea is defined as painful menstrual cramps in the uterine origin, directly linked to menstruation without any visible pelvic pathology. It often begins with the onset of ovulatory cycles six months to one year after menarche. The pain is usually felt 24 hours before menstruation or over the first 1 or 2 days of menstruation. The pain is characterised by colicky nature and located in the mid line of the lower abdomen but may also be described as dull and may extend to the lower quadrants, lumbar area, and the thighs. Frequently associated symptoms include diarrhoea, nausea, vomiting, fatigue, headache, dizziness, rarely syncope and fever. Primary dysmenorrhea decreases with increasing age. Prevalence is highest in the age group of 20-24 years and decreases progressively thereafter. The identified risk factor for dysmenorrhoea includes teenage, nulliparity, heavy menstrual flow, smoking, upper socio-economic status, attempts to lose weight, physical inactivity, disruption of social networks, depression and anxiety.

In secondary dysmenorrhoea the pain typically proceeds with the start of the period by several days and may last throughout the period. It is an indication of a separate disease which requires treatment other than analgesics by which treatment of the underlying disorder will reduce the pain. The real causative mechanism for primary dysmenorrhoea is not known, but it appears that a major role is played by prostaglandins which are present in various body tissues including the uterus. The intensity of the menstrual cramps and associated symptoms of dysmenorrhea are directly proportional to the amount of PGF2 released. In conventional system, both medical and surgical mode of treatments are used. Medications includes NSAID, Prostaglandin Synthetase Inhibitors and OCP’s used in pain management. Surgery constitutes the final diagnostic and therapeutic option in the management of dysmenorrhea.

According to Ayurveda, the clinical entity characterized by pain, difficult expulsion of menstrual blood due to upward movement of rajas (menstrual blood) propelled by vitiated vata. The upward movement is called as Dysmenorrhoea. Due to movement of flatus etc., natural urges in reverse direction, the aggravated vayu (Apana vayu) moving in reverse direction fills yoni (uterus). This yoni seized the pain, initially throws or pushes the rajas (menstrual blood) upwards, then discharges it with great difficulty. The lady feels relief immediately following discharge of menstrual blood. Since in this condition rajah (menstrual blood) moves called as Dysmenorrhoea. Besides painful and frothy menstruation, there are other pains of vata (body ache, general malaise etc.). In madhukosha commentary all around movement of vayu is said to be the cause of pain. The discharge of frothy menstrual blood associated with kapha.

**Mechanism of pain production**

1. The Obstructive theory: This theory is that there is obstruction to the outflow of blood by the acute
bend in the uterus at the internal os, by stenosis of the internal os, aggravated by premenstrual congestion, and that the retained blood then sets up irregular, spasmodic and painful contractions occurs. As per Ayurveda this obstruction is caused due to vata.

2. The Hypoplasia theory: The uterus as remained in the prepubertal state, with a small corpus, relatively long cervix and under developed muscles which is unable to expel the menstrual blood. The retained blood sets up painful contractions (due to alpa mamsa dathu).

3. Disturbed Polarity of uterus: If the uterine polarity is disturbed menstrual blood is retained in the uterus and sets up painful irregular contractions (due to apana vata which causes viloma gati of Rajas).

4. Clotting of the menstrual blood: According to this view dysmenorrhoea may be caused by clotting the menstrual blood (baddha artava), the clots being then difficult to expel [12] (due to kapha).

5. Degenerative changes in the nerves supplying the uterus (due to vyana vata).

6. The muscle ischemia theory: It is suggested that the pain is due to ischemia of the uterine muscle during exaggerated uterine contractions (due to vata).

7. Increased prostaglandins, endoperoxides, and metabolite.

8. Exessive decidual formation (due to kapha).


10. Corpus luteum- if there is no corpus luteum no dysmenorrhoea, as is illustrated by the painless bleeding of anovular menstruation.

11. Low pain threshold, General ill health (alpa sara).

12. Psychological factors (manasika karanas).

13. Environmental factors causing nervous tension (viharaja).

**Specific treatment**

- Sneha karma (oleation) with Traivrita sneha.
- Sweda karma (hot fomentation).
- Oral use of Dashamoola ksheera.
- Vasti (enema) with Dashamoola ksheera.
- Anuvasana vasti (oil enema), Uttara vasti (intra uterine oil instillation) with Traivrita sneha matra vasti
- Poultice made of pasted Barley, wheat, kinva, Kusta, Shatapushpa, Priyangu, Bala.
- Intake of sneha in oral form.
- Sweda with milk.
CASE REPORT:

A 26 year old unmarried female, speech therapist residing at A.R.A.C ,Manchi Hill ,Sangamner attended the OPD of our hospital, with complaints of severe painful menstruation along with reduced bleeding on the first day affecting her daily routine, for the last 6 months. She also complaints of having nausea and constipation 1-2 days prior to menstruation for last 6 months.She attained menarche at the age of 12 and had regular menstrual cycles at an interval of 28 - 30 days, duration 4-5 days, with moderate quantity of bleeding associated with mild lower abdominal pain on first day.

For last one year she noticed increasing nature of lower abdominal pain during menstruation. For last 6 months pain became intolerable, lasting for 12-14 hours along with reduced bleeding on first day. The pain was felt over lower abdomen and low back region which was radiating to both lower limbs. Pain gradually reduces and subsides by second day of cycle. Due to this intense pain she was unable to attend her office on the first day of menstruation and this forced her to resign the job. For this she consulted a gynaecologist and had underwent USG, which reported that both her ovaries were close to the uterus, and she was advised to take analgesic drugs. The patient continued those medicines and hot water bag application for 6 months, by which she was unable to get considerable relief, so she approached our OPD for better management. There was no significant past history of any other chronic illness, no history of any kind of allergy or addictions. Her personal history revealed constipated bowel habit and disturbed sleep. She is the second child in her family and no similar complaints were reported among her siblings. All the vitals were within the normal limits. Abdominal examination revealed no tenderness or masses. Blood investigations like Hb, ESR were carried out and found to be normal. After doing roga rogi pareeksha,it was found that her food habit was irregular ,which lead to alpagni and kapha dosha dushti .Thus rasa vaha and artavavavaha srotodushti takes place along with apana vata vaigunya, and resulted in severe pain during first day of menstruation with reduced bleeding. As she was characterized with pain and reduced raja, the condition was diagnosed as Dysmenorrhoea. Pain intensity assessment was done using Visual Analogue Scale (VAS) on the initial day of treatment 25th may 2015. Her baseline VAS grading was 10. Bleeding quantity on first day was assessed by PBAC (Pictorial Blood Loss Assessment Chart) with a baseline score of 3 points.

- Sneha in the form of Anuvasana vasti & Uttara vasti.
- All other measures capable of suppressing the vata
**Probable mode of action of matra vasti:**

Matra vasti has both local & systemic effects. It causes Vatanulomana thereby normalizing Apana vata. Gut is a sensory organ consisting of neural, immune & sensory detectors and cells, and provides direct input to local (intra mural) regulatory systems and information that passes to CNS or other organs. Vasti may stimulate the enteric nervous system and thus it can influence CNS and all bodily organs. Vasti may act on the neurohumoral system of body by stimulating CNS through ENS. It thereby restores the physiology at molecular level. It can also act on the inflammatory substances like prostaglandins and vasopressin etc. vasti may also help to excrete increased prostaglandins. Visceral afferent stimulation may result in activation of the Hypothalamo-pituitary, adrenal axis and Autonomous nervous system, involving the release of neurotransmitters like serotonin and hormones. Thus, it normalizes the neurotransmitters, hormonal and neural pathways and relieves all the symptom complex emerged as a result of neurohumoral imbalances in the patients of dysmenorrhoea. Spasm caused by vitiated Apana vayu causing obstruction to the flow of menstrual blood is the general underlying pathology. It removes the sankocha (spasm) by virtue of its sookshma, vyavayi and vikasi i.e., fast spreading nature.

**Management and Outcome:**

Therapeutic plan was initially to correct her agni by dīpāna pāchana with Ashta cūrṇa 6gm along with 1 teaspoon of gṛhita twice daily for 5 days. Followed by administration of Sukumara kashaya 50 ml before food and Abhayarista 30 ml after food twice daily till the next cycle. A 100 ml of Sukumara Ghrita was administered as matravasti for 7 days on OPD basis, 10 days prior to the expected date of menstruation.

For the consecutive 3 menstrual cycles this treatment protocol was followed. After 3 months of treatment, there have been no episodes of menstrual pain and the follow up assessment were done in 4th, 5th and 6th menstrual cycles. After the follow up period also the patient got marked relief from the pain and was not using any analgesics even now, the patient uses abhayarishtam 5 days prior to expected date of menstruation and she got relief from menstrual pains.

<table>
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<th>Table: showing various symptoms in BT, AT and follow up period</th>
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<td>Variables</td>
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<td>Pain</td>
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<td>Nausea</td>
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<td>Bleeding quantity on 1&lt;sup&gt;st&lt;/sup&gt; day</td>
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The main presenting clinical feature of the patient was pain and by the due course of administration of matra vasti with sukumara ghrita the patient got symptomatic relief and was able to effortlessly follow her daily routines.

DISCUSSION AND CONCLUSION:

The clinical condition of present case was considered as udavarta yonivyapathxvi, which is one among the vimshati yonivyapath. It is caused by vata vaigunya. Acharya charaka says that during normal menstruation pain will not be present, so the pain during menstruation is abnormal and hence it requires therapeutic management. In the present clinical case, the patient’s agni is in a depleted condition causing dosha imbalance, especially adhogamana of apana vata will be disturbed by which it moves in upward direction (urdhwa gamana) in the yoni. This causes spasm of uterine muscles leading to severe pain during menstrual shedding. Spasm caused by vitiated apana vayu results in obstruction to the flow of menstrual blood is the general underlying pathology. So in this case treatment mainly aims in correction of agni followed with anuloma gati of apana vata. Here the main treatment plan should be aimed towards correction of agni supporting anuloma gati of vata. We used Ashta choorna in the initial 5 days as it has deepana, pachana, ruchya properties. Prakruta apana vayu is responsible for the proper nishkramana of sukra, artava, sakrut, mootra and garbha. Hence in this case, vata dosha especially apana may be vitiated leading to difficulty in menstrual flow along with pain. In both kevala vatadashti and vata ulbana samsarga sannipata doshas, vasti is the main line of treatment. On considering the roga rogibala, matravasti is suitable here as patient is alpa bala with mandagni were a heavy dose of sneha vasti may not be suitable. It can also be administered easily in an OP basis mode of treatment without any special pathyacharanas or physical and mental strain. Matra vasti has both local & systemic effects. It causes vatanulomana there by normalizing apana vata. As the patient is of young age and psychologically afflicted with the present situation, ghrita is found to be a better option as it is brihmana and medhya. The formulation of sukumara ghrita and kashaya is selected here, as the ingredients are mainly of madhura rasa, madhura vipaka and snigdha guna, with the action of kapha vata samana, anulomana, sroto rodha nivarana and garbhasaya shodhana. The formulation Abhayarishta with abhaya as main ingredient in this context is aruchihaara, balaagni vardhaka, vataanulomana and vibandhanut. It is mentioned as pathya in all yonirogas so that it maintains prakrtavastha of apana vata. In this present case report, the treatment plan was opted under OPD basis and was found to be very effective in symptomatic relief and improvement of general conditions of the patient. This treatment is very safe and economic with no adverse effects or complication.
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POLYCYSTIC OVARIAN SYNDROME: PERSPECTIVES OF AYURVEDA AND MODERN SCIENCE

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ABSTRACT

Polycystic ovarian syndrome is also known by the name of Stein-Leventhal syndrome. It is a hormonal disorder affects 12-18% women of reproductive age. Women with PCOS have irregular mestrual cycle, excess of androgens, insulin resistance, serum lipids alteration, anovulation, acne, hirsutism, and infertility. According to ayurveda this type of clinical features are found in PUSHPAGHNI (having hyperandrogenism and anovulatory cycle), NASHTARTVA yonivyapad (no proper growth of follicles and chronic anovulation), and ARTVAKSHAYA (oligomenorrhoea). It involves imbalance of DOSHA, DHATU, UPDHATU. Evidence based medical management of pcos is done by controlling irregular menses, treatment of hirsutism and acne, management of infertility and insulin resistance. The chemical based drugs induce ovulatory cycle in women, instead of allowing it to restore to its original healthy rhythm. Surgical management of pcos is done by ovarian drilling. Still there is low success rate in all therapies in gaining fertility and normal menstruation. Hence, an answer is in ayurveda. The present study highlights the concept and management of pcos as per ayurveda and modern science.

(Keywords- Ayurveda, PCOS, Yonivyapada)

INTRODUCTION

Polycystic ovarian syndrome is most common endocrine disturbance disorder that affects atleast 7% of adult women. According to the National Institute Of Health Office of Disease Prevention, PCOS affects approximately 5 million women of child bearing age. Research suggest that 5-10% of females at 18-44 years of age are affected by pcos making it the most common endocrine abnormality among women of reproductive age1.

PCOS was first described by Stein and Leventhal in 1935, and insulin resistance is further described by Burghen in 1980 (2). It may be clinically manifested as anovulation, oligomenorrhoea, hyperandrogenism, hirsutism, male pattern baldness, acne, polycystic ovaries and metabolic
syndrome like hyperinsulinemia, obesity, dyslipidemia. Because of anovulation 73% of women suffering from pcos experience infertility. Chronic anovulation leads to persistent increase in the levels of serum oestrogen which is a risk factor for cancers like ovarian cancer, endometrial cancer etc. Metabolic syndromes may increase risk of development of hypertension, atherosclerosis, type 2 DM, cardiovascular diseases throughout the life of affected women[3].

So, PCOS has become a burning problem in young women of todays era. Its diagnosis is difficult as it manifests as a spectrum of symptoms rather than a single one, similarly we can not correlate any single disease in ayurveda to pcos. Ayurveda describes pcos to have an equal involvement of dosha, dhatu, updhatu. Symptoms of this syndrome has a resemblence with terminologies defined as : ANARTVA- Amenorrhoea, YONIVYAPADA (anatomical and physiological disorder of the reproductive system) like ARAJSKA- Oligomenorhoea due to vitiation of vata, LOHITKSHYA- Oligomenorhoea due to vitiation of vata- pitta dosha, VANDHYA- Infertility, PUSHPAGHNI- Anovulatory menstruation. ABEEJATA- Anovulation, RAJODUSHTI and ASHTARTAV DUSHTI- Menstrual flow disorder due to vitiation dosha, Shandhi- due to vitiation of vata[4].

Vishama ahara and vihara (improper diet and activities) causes reduced digestion and metabolism leading to immaturity of digestive extract and formation of improper rasa which vitiates menstrual blood and leads to increase in medodhatu and kapha. Therfore all the symptoms of pcos can be cosidered under rasa and medo pradoshaja laxanas[5].

NIDANA

Now-a-days, a strong focus is laid on the contribution of dietary habits & physical inactivity.

a) Many studies state that the bad dietary habits result in influencing in abnormal assimilation and absorption leading to insulin insensitivity. Insulin resistance interferes with the ovulation process due to hormonal imbalance.

b) Studies also indicate that lack of adequate exercise leads to an imbalance in energy expenditure and energy consumption further worsening the endocrinal disturbance [6].

c) Improper sleeping durations resulted in increased insulin insensitivity.

Thus, adequate sleep also has a role to play [7].

d)Ayurveda has given number of causes for this kind of diseases under the broad heading of santarpanotta vyadhis. 90% of pcos patients will be suffering with obesity, this makes it clear that it is a type of santarpanotta vyadhi, caused due to intake of snigdha, madhura, guru, picchila, nava anna, nava madhya, cheshta dwesha, divaswapna, asana sukha. These all nidana`s can be probably
compared with sedentory life style, junk food, improper work schedules, stress etc which are consumed by almost all womens in todays era [8,9,10].

SAMPRAPTI AND LAXANA

The whole process of formation of cysts and other symptoms starts from mainly four causes first is abnormality in hypothalamo-pituitary axis, then comes excessive androgen production, anovulation, obesity and insulin resistance.

PCOS is a condition where the increased pulse frequency of GnRH leads to increased pulse frequency of LH, thus there will be increase in LH levels as compared to FSH.

Excessive androgen production takes place from ovaries due to stimulation of theca cells by high LH level, hyper function of P450 C17 enzyme, and theca cell stimulation by IGF-1.

Hyper-insulinamia causes stimulation of theca cells to produce more androgens, and insulin inhibits hepatic synthesis of SHBG (sex hormone binding globulin) resulting in more free level of androgens, obesity and hyperprolactinamiea will add up to increase presenting complaints.

Thus these all factors affects follicular growth during the ovarian cycle causing the immatured follices to remain in the ovary. The retained follices form in to a cyst and with each ovarian cycle a new cyst is formed leading to multiple ovarian cysts. The women having this type of cyst will usually have complaints of oligo and hypomenorrhoea with associated symptoms like increased body weight, irregular menstrual cycle, hirsutism, acne vulgaris etc [11].

These symptoms simulates to the laxana`s of rasa pradosha and medho pradosha. Where in laxana’s like artava dushti, ati abaddha medhas, khalitya, palitya, and prameha purva roopa laxana`s are observed.

All nidana`s which are told will lead to vriddhi in kapha dosha and ksheenata of pitta dosha, this vitiated dosha’s cause dushti of agni. Rasa dhatvagni and medho dhatwagni are affected leading to symptoms of respective srotodhushti, thus sthaulya, prameha and artava dushti lakshana’s are seen in this condition. The ahara rasa which is formed will lead to tushti of only medho dhatu causing sthoulya laxana’s in patient and as improper nurishment of rasa dhatu is observed which leads to artava dushti or ksheenata of artava.

CHIKITSA (TREATMENT)

The contemporary treatment of PCOS as per modern science:[12]

1) Loss of at least 5-7% body weight can restore ovulation in up to 80% obese patients possibly by reducing hyperinsulinaemia and thus hyperandrogenism when BMI is elevated.
2) Induction of ovulation (OI) with Clomiphene citrate is the next step in management, but it should be limited to three cycles. This is followed by use of insulin sensitizer as a single agent. Subsequently, administration of insulin sensitizer with Clomiphene is advisable.

3) Following insulin sensitizing, Gonadotropin therapy and FSH hormone are the next option. Pharmacotherapy includes Metformin (Glucophage), a drug of choice that increases ovulation and simultaneously reduces the problems caused by insulin resistance and regulates the excessively raised levels of the androgens. Apart from these, anti androgenic therapy is advisable to reduce the masculine effects of testosterone like alopecia, hirsutism etc. and Eflornithine as a cream to retard hirsutism.

4) Patients who do not respond to Clomiphene therapy are further subjected to surgical procedure namely Laproscopic Ovarian Drilling (LOD). It destroys the androgen producing tissues, thus correcting hormonal imbalance and restoring normal ovarian functioning.

   It ultimately decreases the elevated LH and Testosterone levels and increases the FSH levels. A failure of all these calls for single embryo transfer by In Vitro Fertilization (IVF) as the last resort.

**Lacunae observed in the modern management**

Symptomatic treatment which doesn’t correct the basic cause e.g ovarian drilling surgeries or cosmetic creams to treat hirsuitism.

The mental and occupational aspects influencing the untoward increase of infertility are not taken into consideration

Less highlight on the correct implementation of dietary habits. (For example - effects of fast foods and canned foods, overuse of bakery products, fermented foods etc.)

Lack in incorporation of regulation of homeostasis in body and biological clock by simple routine habits. Excessive use of drugs like metformin, clomiphene and HRT (Hormone replacement therapy) that further worsens the conditions. Also, a paucity of data is observed in their scientific validation on prolonged use.

Overall review of the available data indicates that the holistic approach is inevitable for the management of such syndromes.

**Treatment as per Ayurveda**

As per Sushruta, nidana parivarjana (avoiding or curbing the practice that vitiates diseased condition) is considered to be indispensible before any treatment[13].

In Ayurveda, the cardinal sign of vyadhi is agnimandya. Consideration of Jatharagni and dhatvagni dysfunction is of prime importance in lifestyle disorders.
As rasa and medho pradosha laxana’s are seen in this condition so by yukti one can implement the chikitsa which will be helpful for both rasa pradosa and medho pradosa like chatushpakara samshuddhi (comes under dashavidha langhana).

Treatment mode is classified into two aspects:

A) Preventive

Preventive management includes – NIDANPARIVARJAN i.e avoiding of the causative factors such as shlemala ahara, adhyashan, avyayama, diwaswapna etc. Undergo seasonal sansshodhan therapies like vaman in vasant rutu virechana in sharad rutu and basti chikitsa in varsha rutu. Also practising dinacharya and rutucharya and nitya vyayama.

B) Curative management is of two types -

1) Sansshodhan chikitsa
2) Sansshaman chikitsa

1) Sansshodhan Chikitsa-

It aims at improving ailments by curbing the root cause. Here, Sansshodhan chikitsa and that too vamana is stated to be applied. Vamana karma is basically given in shleshmadhikyata. Being a santarpana vyadhi, there is rasadushthi in the patient which leads to aama formation in obese person. The deranged metabolic process further continues as a chain reaction disturbing the function of all dhatus. The mala of Rasa is kapha. Herein, the malaswarupa kapha is increased and so the nutrition to the upadhatu raja is hampered leading to its imbalance.

Ruksha teekshna basti, udvartana, and virechana are also helpful in large extent.

2) Sansshaman Chikitsa-

Artava is stated to be agneya in nature. The shleshmala aahara vihara results in soma gunadhikya thus, influencing artava kshaya. Hence, agneya dravyas are always helpful in pcos[14]. The properties of agneya dravyas are -ushna, ruksha, tikshna, vishada, sukshma, dahaka, pachana. Ushna veerya dravyas helps in pitta vruddhi and artav vruddhi. [15]

Ayurvedic formulations and drugs useful in pcos are– triphala kwath, chandraprabha vati, maniprabha churna, kanchnar guggul, lodhra, shatavari, shatpushpa, guduchi, ashoka, gokshur, ashwagandha, atibala etc [16].

AAHARA

Aachryas have suggested to use those dravyas that are guru but still aptarpana[17]. In case of apatarpana, all foodstuffs possessing medoghna properties must be prescribed. e.g. gavedhuka, yava, priyangu, shyamak, cheenak. Besides these, madhu and takra which is a good source of vitamins and lactic acid. Fruits can include amla rasa pradhan like oranges, lemons, sweet lime, also pineapple, papaya that stimulate digestion.
Sushruta has advised to include fish in diet in case of nashtartava.[18]

New research findings suggest use of foods rich in inositol in diet of PCOS. Its supplement alongwith folic acid produced spontaneous menstrual cycles in up to 88% of anovulatory patients and maintained normal ovulation in 72% of patients for up to 6 months. The rich sources include sprouts of legumes, citrus fruits, wheat germ, pineapple, guava, grapes and nuts [19].

High fat diets containing fish oil and olive oil can increase the desacyl-ghrelin which may play a role in weight, appetite control and insulin resistance. Improvement in ghrelin suggests the probable agneya effect. Besides, the omega -3 acids promote ovulation [20 Proteins derived from fish have found effective on insulin sensitivity. Rohit matsya is said to be vatahara and vrishya, which must be scientifically validated[21].

VIHARA-

Exercise -This firstly includes regular exercise. Many studies have reported improvement in insulin resistance and thereby regularity in menses by regular exercise.

Pranayam – The KAPALBHATI pranayam was observed effective to decrease BMI and abdominal fold thickness. [22]

Yoga – Yoga was found to be more effective than conventional physical exercises in improving glucose, lipid and insulin values, including insulin resistance values in adolescent girls with pcos. [23]

DISCUSSION

Concepts in modern medical science are not constant they are changing daily, first they have mentioned PCOD then that changed to PCOS. The long standing hormone disturbances and hyper oestrogen levels may cause various complications like carcinoma of breast, ovary and endometrium etc, so it is very necessary to find out the exact solution for this disease at a proper time.

One can consider these symptoms under nidanarthakara roga or vyadhi sankara (syndrome). Agni plays a vital role in causing any disease, here the vitiated kapha, pitta and vata dosha causes dushti of agni, dushita agni becomes prime cause for this complex presentation of the disease, where in dushita agni causes rasadhatwagni dushti and that dushita rasa dhatu causes artava dushti. Sara bhaga of ahara rasa does excessive tushti of medho dhatu which results in sthaulya and prameha like symptoms.

The vitiated agni further vitiates rasa dhatvagni and medho dhatvagni which in deed causes artava dushti and medho dhatu dushti.

Ruksha udvartana helps in kapha medho vilayana, where as teekshna basti helps in vatanulomana. Yamana helps in kapha shamana and agni deepana. All these treatment principles act
by correcting agni and respective dhatwagni`s. Ushna veerya dravya`shelps in pitta vruddhi and 
artava vruddhi, by this menstrual cycles gets regularised. Aahara and Vihara also plays a major role 
while treating PCOS.

CONCLUSION

As PCOS is a lifestyle disorder, changing life style has altered normal physiology of the 
body, which has made great impact on women's physical, psychological and emotional health. The 
treatment explained in contemprory science do not give complete relief and they have their own 
limitations and side effects. So ayurveda is the better way to get complete cure from the disease.

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MORPHINE ADDICTION AND ITS MANAGEMENT - A REVIEW

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ABSTRACT:
Morphine is a natural derivative (opiates) of poppy plant which is used as a potent painkiller. It has been said to be one of the most potent opioid drugs in existence, which acts on central nervous system (CNS) to alter the way pain is perceived by the body and produce a euphoric effect. When used as in therapeutic dose it can be helpful in relieving moderate to severe pain. But use for a long period of time it can cause person to develop a drug dependency. This paper deals with the Morphine addiction, withdrawal symptoms and its managements.

Key Words: Morphine Addiction, Morphine Abuse,

INTRODUCTION:
Any behavior can be termed as an addiction, if it becomes the primary focus of a person's life, and especially if it results in harmful effects to one's physical health and well-being. Addictions can be physical (of the body), psychological (of the mind), or both. The term addiction is most commonly associated with a person's compulsive and habitual desire to consume a chemical substance, such as alcohol or other drugs. \(^1\) Drug addiction is common with the use of habit forming drugs such as nicotine, cocaine, opioids, marijuana (cannabis), opium, steroids and some pain killers. Addiction due to opioids i.e. morphine, codeine and heroine is common in world population. \(^2\)

Morphone:
Morphine is a member of the opiates family and along with codeine, occurs naturally in opium. Morphine discovered in 1805 by Friedrich Sertürner (1783–1841), a German pharmacist. It is the most effective naturally occurring compound used for the relief of pain in medicine and surgery. \(^3\) Its narcotic properties also produce a calming effect, protecting the body's system during traumatic shock. Morphine is known by any of the following: Miss Emma, Big M, Cube, Red Cross, Mojo, Morps, MS Contain. Morphine comes in a variety of forms such as capsules, tablets, syrups or liquids. It can be taken orally or injected either under the skin or into the muscle. \(^4\)

Morphine Indications:
Morphine can be used as an analgesic to relieve Pain in myocardial, Pain in sickle cell crises, Pain associated with surgical conditions, (pre-and postoperatively), Pain associated with trauma, Severe chronic pain, e.g., cancer, Pain due to kidney stone (renal colic and ureterolithiasis)and
Severe back pain. Morphine can also be used- As an adjunct to general anesthesia, in epidural anesthesia or intrathecal analgesia, For palliative care (i.e. To alleviate pain without curing the underlying reason for it, usually because the latter is found impossible), As an antitussives for severe cough, As an antidiarrheal in chronic conditions (e.g., for diarrhea associated with aids, although loperamide a non-absorbed opioid acting only on the gut) is the most commonly used opioid for diarrhea.[5][6]

**Effects of Morphine:**

The action of morphine will depend upon age, quantity taken and route of administration, whether you have taken other substances and your mood at that time. Everyone reacts differently to this but there are effects which are general to every user. These include the cessation of pain, mild euphoria (felling of joy), sleepiness, lack of concentration and a feeling of relaxation. In some cases people will experience nausea, vomiting and sweating. [...] A higher dose will result in more intense effects. If morphine is injected then the effects will occur almost straight away. But if taken as a tablet then they will take longer to occur and usually last for up to 20 minutes. The effect of morphine can remain for short term or long terms on prolong use. Short-term effects of Morphine include Euphoria, Drowsiness, Constipation and Depressed breathing. A large single dose can cause respiratory depression, coma, or death. Long-term effect of Morphine can lead to effects such as Physical dependence (addiction), Increased tolerance (requiring higher and higher doses to achieve the same feelings of euphoria), Hypoventilation, respiratory depression, or shallow breathing and Muscle twitch (muscular jerk) etc.[8][9]

**Morphine Addiction:**

If morphine is prescribed for medical reasons then careful monitoring will reduce the risk of tolerance and addiction. But there are people who find that they enjoy taking morphine because of its effects which leads to a tolerance. They increase the dose to achieve the same effects and find that they experience withdrawal symptoms if they stop taking it. The biggest issue with continued morphine use is the development of morphine addiction. Everyone who takes morphine for an extended period of time on a regular basis will develop a physical dependence upon the drug. This means that more and more of the drug will be needed to in order to maintain the same level of pain management as originally experienced. When this happens, it is described as developing a morphine tolerance and this is a characteristic of morphine addiction. When someone started to crave for morphine, wanted more before scheduled dose time or wanted more than the amount prescribed, this is another hallmark of morphine addiction. [...] Psychological cravings and the desire to enhance the prescription with more morphine, other opiate painkillers or other drugs including alcohol is a sure sign that morphine addiction is in effect and morphine rehabilitation is necessary. Morphine use may
be harmful to an unborn baby, and could cause addiction or withdrawal symptoms in a newborn. Morphine should only be used by pregnant women when specifically instructed by a doctor. Women who are breast feeding should also only take morphine when recommended by a doctor. Morphine abuse has been found to cause miscarriage in some pregnant women. Morphine addiction develops as the result of an on-going untreated dependency. The patient did not choose Morphine addiction; it comes from medicating him in order to: Alleviate physical pain, Relieve emotional pain, Prescriptions for misdiagnosed depression or anxiety, Avoiding withdrawal, Experimentation with recreational drugs etc. All above can develop dependency into Morphine addiction and invite withdrawal syndromes.

Side Effects of Morphine:

Morphine side effects dramatically increase when combined with alcohol. Most patients contact doctors because of disturbing Morphine side effects due to habitual intake. Morphine shows a higher occurrence of pharmacological effects and physical or psychological dependence than other opioids at the same analgesic doses. Common side effects of Morphine include Anxiety, Constipation, biliary tract spasm, Diarrhea, Dizziness, drowsiness, Euphoria or dysphoria, Fainting, palpitations, Headache, Lack of sexual drive, Loss of appetite, Memory loss, Nausea and vomiting, Pinpoint pupils, Sleeplessness (insomnia), Stomach pain, Sweating and Urinary urgency or retention etc. Some severe side effects of Morphine includes Cold and clammy skin, Confusion and hallucination, Convulsions, Depressed and changing moods, Difficulty in urination, Extreme nervousness, Light-headedness and fainting, Severe or persistent stomach pain, Severe weakness or dizziness, Tightness in the chest and Yellowing of eyes or skin. Patient needs urgent medical attention if he develops symptoms such as Slow or shallow breathing, Slow or shallow heartbeat, Fast or irregular heartbeat, Severe though infrequent-allergic reactions such as- Swelling of face, lips, tongue and mouth, Difficulty in breathing and Severe rash all over the body. Morphine Withdrawal:

Morphine withdrawal comes on suddenly if discontinuation of the drug is not gradual. Morphine withdrawal symptoms related to addiction and dependency usually manifest between 6 to 12 hours after the last administration, typically when the next scheduled dose is due. Major Morphine withdrawal symptoms will peak at 36 to 96 hours after the last dose, and will subside within 8 to 12 days afterwards. The effects of Morphine withdrawal vary with the individual, yet they often include: Aches and pains, Cold or flu like symptoms, Headaches, Lacrimation (eyes tearing), Loss of appetite, Mood swings, Nausea, Restlessness, Runny nose, Sleeping difficulties, Sweating, Yawning and Strong drug craving (in some cases). More intense drug craving often appear as Morphine withdrawal syndrome progresses. Patients should know that Morphine withdrawal is an
agonizing process that may cause damage to body’s systems. To alleviate the dangers of Morphine withdrawal, opiate treatment requires safe and responsible care combined with the latest medical technology. \[^{[14][15]}\]

**Treatment of Morphine Addiction:**

The best treatment for such a condition is the total deprivation of the drug from the patient, but this cannot be achieved without great moral control over one’s mind, which is not possible in such people. The ideal treatment should allow fewer withdrawal symptoms as sudden withdrawal produces atypical abstinence syndrome. The use of a totally synthetic opioid methadone, which lasts longer within the body than either morphine or heroin, is very helpful. Methadone closely mimics the basic opiate structure so it is given orally (different from the usual means of abuse), and thus substitutes the things that come with illicit drug use. Methadone helps relieve the craving for more drugs and delays the appearance of withdrawal symptoms as long as it is in the body. Doses are gradually decreased. If the dose of morphine that was abused is known, then 1 mg of methadone can substitute for 4 mg of morphine. Otherwise, a dose of 10-50 mg a day can be reduced by 20% per day. \[^{[16][17]}\] Clonidine (Catapres) is another drug used to treat opiate addiction. It can relieve the anxiety, runny nose, salivation, sweating, abdominal cramps, and muscle aches of opiate withdrawal. Side effects are dry mouth, dizziness, and drowsiness. Clonidine is initially taken at 0.8 - 1.2 mg a day, maintained for a few days, and then gradually decreased. \[^{[18]}\] Recovering addicts who fear a moment of weakness can strengthen themselves with the long-acting opioid antagonist naltrexone. Using naltrexone makes it impossible to get high from taking other opioids. But naltrexone must be taken before any other opioids are used, or withdrawal will occur. The usual dose of naltrexone is 25-50 mg orally, in the morning. Depression has been reported with its use, and it also raises toxin levels in the liver. Headache and nausea are encountered with naltrexone use. \[^{[19]}\] LAAM (levo alpha acetyl methadol) is another opiate blocker that has been used to wean addicts. It persists up to 72 hours in body. Drug treatment is planned to help addicted individuals to stop compulsive drug seeking and use. Treatment can occur in a variety of settings, in many different forms, and for different lengths of time because drug addiction is typically a chronic disorder characterized by occasional relapses. Therefore a short-term, one-time treatment is usually not sufficient. For many addicts, treatment of addiction is a long-term process that involves multiple interventions and regular monitoring. The addicts can be best treated in an institutions or rehabilitation center.

**Conclusion and Summary:**

Everyone who takes morphine for an extended period of time on a regular basis will develop a physical dependence upon the drug. Once Morphine addiction is continued, addict stops growing emotionally and socially. For total deprivation from addiction, it is necessary for addicts to seek
proper medical care. The most popular medications used for Morphine maintenance treatment is methadone. There is a need for the government as well non-governmental organizations to collaborate and supplement each other's efforts for a solution to the problem of drug addiction through education and legal actions.

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DISSOLUTION OF MUSLIMMARRIAGE ON ACCOUNT
OF IMPOTENCE OF HUSBAND

Dr. Badre Alam Khan*

1. INTRODUCTION

Marriage is an important aspect of human life. It gets the sorrow, uneasiness and unpleasant things changed into happiness. It may be said that to get easiness and pleasure it is a must. Quran says-

“He created for you
Mates from among yourselves
That you may dwell in
Tranquility with them,
And he has put love
And mercy between your (hearts);
Verily in that are signs
For those who know”

Thus, the creator, in order to keep the person in tranquility and love, the institution of marriage has introduced. That is why Allah has guided the men in the following verse.

“So the contrary live with them
On a footing of kindness and equality”

Abu Bakar Jasas Razi has, while commenting the above verse, said “Don’t talk with them in rough manner, do not ignore them in the home affairs.”

Thus, talking in good manner, showing the love and affection so that they may feel happy, is necessary, as Allah has revealed in the above-mentioned verse. Allah further guides-

“They are your garments
And ye are their garments”

Meaning there by that like garments one is the need of the other at every time and not for temporary period or only sexual passion.

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1 I have written several papers on the grounds of dissolution of Muslim Marriage in which the introductory part and grounds of dissolution are common.

2 Sura (Chapter denoted as S) 30 : Ayat (Verse or sentence denoted as A) 21

3 Holy Quran S 4 : A 19

4 Holy Quran S 2 : A 187

5 Jasas ‘Ahkamul Quran’—Vol . II p. 109
Since man is free in his acts, he can do the good work as well as bad work. Sometimes it happens that a man keeps his wife in complete misery. She is subjected to the excess of her husband. She has nothing to do except tolerating. But sometimes it becomes intolerable for her. In that extreme circumstances woman has right to get this pious tie broken. If a husband is feeling aggrieved, he can use the right of divorce. Where woman is aggrieved, she can get the marriage dissolved. But women are also cautioned in the use of their rights. Prophet (PBUH) has said\(^6\) –

“Every woman who ask her husband to divorce her without cause, the smell of paradise is forbidden to her.”

But when she is feeling that the continuance of tie will lead her in a life which is unfavourable for her in this world as well as hereafter she can use her right to reach the Qazi to get the marriage dissolved. Before using the right, a woman is guided to choose the other solutions. Allah commands\(^7\)-

“If a wife fear
Cruelty or desertion
On her husband’s part
There is no blame on them
If they arrange
An amicable settlement
Between themselves;
And such settlement is best”

And further if they are unable to reach on any amicable solution, they can appoint the arbitrators.

“If ye fear a breach between them twain,
Appoint (two) arbiters
One from his family,
And one other from hers
If they wish for peace
Allah will cause
There is reconciliation
For Allah hath full knowledge
And is acquainted With all things”.\(^8\)

Not only women but also men are guided to use the right of divorce in extreme circumstances.

\(^6\) Fatwa Qazi Khan Vol. I p. 123
\(^7\) Holy Quran 5:4 : A 128
\(^8\) Id 5: A 35
Prophet (PBUH) has said –

“The most detestable among all permitted things in the sight of Allah is divorce”\(^9\)

Dare Qutni reports that Prophet (PBUH) has said to Muadh (Raz) –

“Nothing has been created by Allah on the earth which is more detestable than divorce”\(^10\)

But when it is the extreme need and the parties, instead of getting satisfaction from each other passing the life in jealousy and hatred and the family becomes the open scene of the hell, in such circumstances this detestable thing becomes a boon.

2. GROUNDS OF DISSOLUTION

The Hanafi jurists describe twelve\(^11\) grounds of dissolution of marital tie but in India there are more grounds than that which are based on primary sources, other schools and legislations i.e.

1) Migration – when a woman comes in Islamic territory after embracing Islam immigrating from non-Muslim state while her husband remains in that state (non-Muslim state).

2) Improper marriage;

3) Marriage in contravention of status or Inequality of the husband (Kufu);

4) Dower if not in accordance with status;

5) Musahirat;

6) Acceptance of Islam by wife (barring the husband);

7) Acceptance of Islam by husband (barring the wife);

8) Fosterage (if the wife has fed her husband during childhood);

9) Option of slavery (Khayare Ataq);

10) Option of puberty (Khayare Balugh);

11) If one of the parties becomes non-Muslim;

12) Relation of master and slave;

13) Untraceability of the husband;

14) Inability to maintain the wife;

15) Neglect of the husband;

16) Impotence of the husband;

17) Insanity of the husband;

18) Virulent or Venereal disease of the husband;

19) Cruelty of the Husband;

20) Enmity between the spouses\(^12\).

\(^9\) "Ibne Umar says that the thing which is lawful, but disliked by Allah is divorce." Abu Daud Vol. I p. 123

\(^10\) Abdul Samad Rahmani "Kitabul Fashkh waltafriq" (Patna: Imamate Sharia, 1400 AH) 2\(^{nd}\) ed. p. 35 citing Dare Qutni

\(^11\) id pp 37-38

\(^12\) Dr Badre Alam Khan, "ADR for Muslim Personal Law" (Jaipur:UBH, 2018) ISBN 978-81-8198-952-4//
Amongst these I shall discuss the impotence of the husband as ground of dissolution.

4. DISSOLUTION ON ACCOUNT OF BEING IMPOTENCE OF THE HUSBAND\textsuperscript{13}

The case of impotence may arise when-1. a husband has no male organ (eunuch) or 2. that may be a non-entity or 3. he is unable to perform marital intercourse.

4.1. EUNUCH

Eunuch means a castrated male employed in a harem\textsuperscript{14} or the person who does not have penis or whose penis is almost a non-entity. To be a eunuch of a husband is a ground of dissolution of marriage. Where the wife wants to get her marriage dissolved on this ground, the Qazi after due inquiry and evidence may dissolve her marriage. Qazi Khan has also given a religious decree (fatwa) for the dissolution\textsuperscript{15}. Hedaya says that the Qazi should dissolve the marriage without delay\textsuperscript{16}. But the Qazi will see whether she has consented to the marriage despite the knowledge or she has accepted her husband when she came to know after the marriage. If she has done so she would not be allowed to get the marriage dissolved on this ground.\textsuperscript{17}

4.2. IMPOTENCE

Impotence means the man who, inspite of having his male organ, is not capable of having sexual intercourse with his wife. A person may be impotent by birth or on account of some disease, weakness, old age or other reasons. The man, who is capable of having sexual intercourse with some women and is not capable of having it with some other women, shall be considered to be impotent in respect of that woman with whom he is not capable of having sexual intercourse. The man who suffers from emission before contact with the woman, he too shall be considered to be impotent.\textsuperscript{18} It is also ground of dissolution of marriage as has been told in the matter of impotence that where a person does not have the capability of marital intercourse. So, a Qazi after due enquiry will assign her the right to opt either her husband or dissolution.\textsuperscript{19} Hedaya also advocates for her right of dissolution.\textsuperscript{20} The right, to demand dissolution through Qazi, of the wife does not lapse

\begin{flushleft}
\textsuperscript{13} Maulana Ashraf Ali Thanvi, ‘HilatunNajiza’ pp.53-59
\textsuperscript{14} Lexicon Webster Dictionary
\textsuperscript{15} Rehmanip. 73
\textsuperscript{16} Ibid
\textsuperscript{17} Ibid citing Durre Mukhatar
\textsuperscript{18} Fatawa ‘Alamgiri, Vol. II, p. 155
\textsuperscript{19} Fatwa Qazi Khan cited by Rehmani ‘Tafriq ’ p. 73.
\textsuperscript{20} Hedaya cited by Rehmani ‘Tafriq p. 73.
\end{flushleft}
even with the passage of time.\textsuperscript{21}

When the wife takes her case before a Qazi it is incumbent upon the Qazi to find out the truth from the husband. If the husband admits that he is not capable of having sexual intercourse with his wife Qazi shall grant him a year’s time for treatment. If husband claims of his having sexual intercourse with the wife and the wife does not claim to be virgin the husband shall be made to take oath to support his claim. If he does take oath that he has had sexual intercourse with the wife, the Qazi shall reject the petition of the wife. If he refuses to take such oath the Qazi shall grant the above-mentioned time to him for treatment.

If wife claims that she is still a virgin the Qazi shall order her to be examined. If the wife, on examination, is not found to be virgin the husband shall be made as above to take oath. If he takes oath that he has had sexual intercourse with the wife, the Qazi shall not pass an order for dissolution. If the husband refuses to take oath the Qazi shall grant him time.

In case the wife pleads about her being not a virgin and that her husband has spoiled her virginity by his fingers or by some other method and not by having sexual intercourse with her and the husband maintains that he has had sexual intercourse with her\textsuperscript{22}, according to Hanafis the result of the examination of the wife as to how her virginity came to be spoiled shall be relied upon. Preferably the number of examining persons should be two.\textsuperscript{23}

The time of one year shall be counted from the day the Qazi grants it. Prior to it whatever the time lapses it shall not be considered.\textsuperscript{24}

If the husband, on treatment, gets well within one year and succeeds in having sexual intercourse with the wife even once, the right of the wife to the dissolution of marriage on this will ground will lapse.

If the husband fails in having sexual intercourse with the wife even once within the given period of one year the Qazi, on the desire of the wife, shall direct the husband to pronounce divorce to the wife. Upon his refusal, the Qazi himself shall effect dissolution.\textsuperscript{25}

\textsuperscript{21} Raddul Mukhtar Vol II p. 612
\textsuperscript{22} Ibid. p. 613
\textsuperscript{25} Hedaya Vol. II p 421
5. INDIAN LEGISLATION

A wife has been authorised by virtue of section 2 (V) of the Dissolution of Muslim Marriages Act, 1939 to demand dissolution on the ground of her husband being impotent and the Court, on the application of the husband, is to grant him time for the period of one year for treatment and prove it negatively. To grant one year’s time to an impotent husband is a settled rule of Sharia. The current law by the addition of the words, ‘On the application of the husband’, has been brought closer to the real spirit of the law. The time that is allowed to the husband for treatment of his impotence is one year. It cannot be less or more than that period. It is stated in Hedayah that the year of probation fixed by the Qazi in the case of impotence is to be counted by the lunar calendar, whereas Fatawa Alamgiri recommends the use of solar year by way of precaution, which is usually followed now.

6. JUDICIAL TREND

A marriage was annulled on the ground of impotence although, the evidence showed that it was restricted to the wife and was not a general condition of the husband. A husband was held by the Madras High Court under the Indian Christian Marriage Act to be impotent when intimacy with the wife was not possible on account of the abnormal size of the male organ as a result of which ordinary and complete intercourse was physically impossible. It was held that the husband was impotent as far as the wife was concerned. The view was based on the reasoning that impotence includes impracticability of coition. Under Muslim law, the husband’s impotence must be proved as a fact. But under certain conditions Courts draw a legal presumption that the husband is impotent. Thus if the husband and the wife have lived together for a long time in the same house under conditions when the sexual intimacy was possible and it be established that the wife is still a virgin, though a fit subject for sexual intimacy, the Court may presume that the husband is incapable for coition at least with regard to the wife. If the Court is satisfied that marriage has not been consummated although no impediment to consummation was there. The Court will be justified in dissolving the marriage. The decision of a case involving impotence becomes difficult when it is contested, and a spouse denies the allegation made by the other. In such a case medical examination of the spouse becomes very important.

26 G. V. M. (1885) 10 App. Cas. 171.
27 Kanthy Balavendram V. Harry, A.I.R. 1954, Mad. 316
28 Ibrahim V. Altagen A.I.R. 1925, All 24; Altafan V. Ibrahim A.I.R. 1924 All. 116,
29 Ranga Swami V. Arravind Ammal A.I.R. 1937, Mad. 237
Court has got full power to order the examination of the spouse or of one of them. In case of refusal to allow such examination, by any one the Court will be perfectly justified in drawing an inference against the party refusing the medical examination. The Courts in India have wide discretion in ordering medical examination of the parties subject to such conditions as may be necessary in a particular case. On the refusal of a party to attend for medical examination, the Court may draw an unfavourable inference against the party guilty of refusal\textsuperscript{30}.

A doctor’s certificate to prove the capacity or incapacity of the other must be strictly proved by examining doctor, who issued it so that it may satisfactorily be ascertained as to what test he has carried out and how has he arrived at his conclusion\textsuperscript{31}. It may however, be stated that opinions of doctors are relevant but not conclusive. When the experts differ, the value and sufficiency of their value may legitimately form the subject of consideration and scrutiny despite their acceptance by one Court or another\textsuperscript{32}.

Ordinarily, the Court is to pass an order, if the husband so wished, giving one year’s time to him for treatment, and adjourn the cases for one year. If on the expiry of one year the disease is found not curable the Court will pass a decree dissolving the marriage.

Allahabad High Court in the case of Mohd. Ibrahim V. Altafan\textsuperscript{33}, observed that the decree passed in the first instance is not to be executed. It is a conditional decree, which becomes operative only on the failure of the prescribed conditions. It does not change the status of parties who continue to be liable for the maintenance of the wife while a spouse can on the death of the other, inherit from the deceased.

Muslim jurists do not recognise a waiver by the husband, that is time shall be given to him even when he does not want it or refuses to have it. The Lahore High Court has, however, held in a case that the condition as to adjournment is imposed for the benefit of the husband and if he does not want to avail himself of it he can certainly waive the right and in such a case the condition of suspension of the Court’s order will not be necessary and the marriage shall be dissolved forthwith\textsuperscript{34}. The principle of law laid down in this ruling is against the rule of Muslim Law mentioned above, but it appears to be more in accord with justice, equity and good conscience. It would be hard on the wife to make her

\textsuperscript{30} Brinda Kumar Viswa V. Hemlata Biswa, I.L.R. 48 Cal. 280
\textsuperscript{31} Conselves V. Iswariah, A.I.R. 1953, Mad. 858
\textsuperscript{32} Altafan V. Ibrahim. AIR 1924, All, 116
\textsuperscript{67} Ibid
\textsuperscript{33} Ibid
\textsuperscript{34} Badruddin V. Mst. Allah Bakhi, A.I.R. 1937 Lah, 383
wait for one year when the husband, for whose advantage the period of one year is granted, does not want it. If he considers that a grant of time is not necessary there is no reason why he should not waive this right. This difficulty is not experienced in India as time is granted to a husband under the provisions of the dissolution of Muslim Marriage Act, 1939, only when he applies for it.

7. CONCLUSION

One of the purposes of the marriage is procreation of children and advancement of generation. Where a husband is not able to sexual intercourse the purpose will fail and thus right of parties will be provided through available remedies. In case of impotence where wife wants, she will be given the relief and the marriage will be dissolved. The hadis of the prophet that marry as it will provide protection to the eyes and passion to the parties. In case of impotence these things will not be achieved consequently dissolution will be the solution.