REVIEW OF MAKARDHWAJA RASA IN INFERTILITY

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ABSTRACT
Infertility is defined as a failure to conceive within one or more years of regular unprotected coitus. According to Ayurveda, conception takes place due to healthy sperm, healthy ovum, and a healthy uterus. Thus infertility depends on the defected fertility potential of both the male and female partner. Treatment principles include evaluating and treating the cause accordingly. **Rasa oushadhi** (metallic and mineral preparations) have most important role in quickly curing infertility. One such preparation is **Makaradhwaja Rasa**. **Objective**: to review the importance of **Rasa aushadha w.s.r Makaradhwa Rasa** to cure infertility. **Material and methods**: literary study is done using Charak Samhita, Sushrut Samhita, Bhaishajya Ratnavali, Ras Ratna Samucchaya, Ras Tarangini, Ras Prakasha Sudhakar, Rasamrita, Rasendra Sar Sangraha, and Bhav Prakash Nighantu. **Discussion**: The Makaradhwaja contains Shuddha Swarna (Purified Gold), Shuddha Parada (Purified Mercury), Shuddha Gandhaka (Purified Sulphur), triturated with Karpasa swarasa (juice of flowers of *Gossypium herbaceum*) and Kumari swarasa (juice of Aloe vera plant). The swarna bhasma is aphrodisiac, cardiac tonic, promoter of eye – sight as well as intellect and rejuvenating. **Parada** has yogavahi property (incorporating and enhancing the properties of drugs with which it is used). **Gandhaka** is rejuvenating agent, yogavahi, aphrodisiac, alleviates kapha, vata. **Karpasa pushpa** has saumanasayanana effect (soothing to mind), an essential factor for **garbha dharana** (conception). Kumari increases the blood circulation to **garbhashaya** (uterus). **Conclusion**: This review highlights that the Makardhwaja rasa is an effective drug for infertility.

Keywords: infertility, parad, gandhak, swarn bhasma, makaradhwa rasa

INTRODUCTION
**Stree bandhyatwa** or female infertility hinders the progeny. The aetiological factors include the defect in the union of sperm and ovum during fertile period.

The contributing factors to this are defect in uterus, cervix and fallopian tube, defect in ovulation and in hormonal function.¹ **Klaibya** or impotency is the inability to obtain or maintain an erection. It is a condition where physical, environmental, psychological, pathological, and
emotional along with many more factors are involved.

Treatment principles includes evaluating and treating the cause accordingly like

1. Vandhyata chikitsa (treating infertility)
2. Anartava chikitsa (treating Amenorrheoa or anovulatory cycle)
3. Garbhasaya balya chikitsa (strengthening reproductive system)
4. Bijadosha chikitsa (treating the quality of semen and ovum)
5. Vrishya or Vajikarana ousadhha (aphrodisiac treatment)
6. Madhura – brumhana ousadhhas (nourishing treatment to both female and male)
7. Apananulomana ousadhhas (carminative treatment)
8. Pumsavana ousadhhas (treatment for best progeny)
9. Psychotherapy etc.

Vajikarana/vrushya chikitsa:
It is one among Ashtangas of Ayurveda (eightfold branches of Ayurvedic science) which deals totally about sexual health. As said by Charaka, the man without child is said to be a tree without any branches\(^2\), the main aim of vajikarana is to do produce the quality progeny.

Shabdstonahalanidhi defines vrushya as a substance which is helpful to fulfil the deficiency of libido. Literally, the word “vrushya” denotes the drugs which can potentiate sexual vigour or promote shukra (seminal parameters/plasma) or both (S.K.D.4.491)\(^3\).

The following are considered as equivalent terms of vrushya:\(^4\)

1. Shukra srutikara (increasing sexual desire)
2. Shukra vriddhikara (enhancing spermatogenesis)
3. Shukra sruti – vriddhikara (possession of both the above properties)

Shukra srutivruddhikara dravyas stimulate the brain and then the sexual organs. They don’t interfere in the production of shukra. Their effect is mostly at the psychic level. It is assumed that they stimulate the sex centre of the brain followed by excitation of sexual organs and finally “shukra visarga” (discharge)

Eg: akakarabha, kasturi, gunja. “sankalpa” (strong determination) has been mentioned by Acharya Charaka as Shukrasrutikara.

Shukra vriiddhikara dravyas which enhance the production of shukra qualitatively and quantitatively come under this category. So, the dravyas bearing properties similar to that of shukra are taken as shukra vriiddhikara dravyas.

Eg: masha, nakra retas etc.

They can be classified into two groups:

- Sadya shukra vriddhikara: these drugs produce the shukra by undergoing the normal process of dhatu utpatti (metabolism) and produce shukra in a very short period after ingestion. Action of such dravyas cannot be explained because it is brought about by their “prabhava” eg: ksheera, ikshuras.

- Kramansha shukra vriddhikara: these types of drugs produce shukra passing through the normal process of dhatu utpatti. Shukra being the terminal dhatu a greater time period is required for its production by these drugs.

Shukra srutivruddhikara dravyas bestowed with both the above said properties are shukra srutivruddhikara dravyas eg: ksheera, shatavari, ashwagandha.

On the whole it can be said that vrushya drugs are those, which can enhance the spermatogenesis or sexual vitality or both.

Among vrishya / vajikarana chikitsa Rasa aushdhis have most important role to play. One such effective preparation is Makardhwaja rasa. Charaka says “nakra retaso vrishyanam” ie nakra retas is best for fertility\(^5\). Nakra refers to maku or crocodile; Dhwaja refers to veerya / shukra, therefore the preparation which gives the power of fertility like makar is Makardhwaja rasa.

The term Makardhaja is a synonym of kama deva, the god of lust and love. Makardadhaja rasa is an
important metalo-mineral formulation of which herbs are also as inevitable and vital part and is an effective kupipakva preparation (a specific type of pharmaceutical practice in which medicines are prepared by gradually increasing heating patterns using a vertical electric muffle furnace).

The main components are Suddha Swarna (purified gold), Suddha Parada (purified mercury), Suddha Gandhaka (purified sulphur) in the ratio 1:8:24 and levigated with herbal juice like Kumari Swarasa (juice of Aloe Vera Barbadensis) and Rakta Karpas Pushpa Swarasa (juice of Gossypium Herbaceum).

**MATERIALS AND METHODS:**

Here, the sources of data’s for conceptual study are taken from Charak Samhita, Sushrut Samhita and Bhaishajya Ratnavali. Rasendra Sar Sangraha is selected as the main reference text for the Makardhwaja Rasa.

Mineral drug review is done with the help of different Ras Granth’s like Rasa Ratna Samuchhya, Rasa Prakasha Sudhakar etc. The herbal drug review is done with the help of Bhav Prakash Nighnatu. Internet browsing from Google Scholar and Pub Med is done to find out reported aphrodisiac activity of the drugs.

All these data’s are put together, analysed and interpreted to understand the concept of Makardhwaj Rasa application in Bandhyatva (infertility).

**OBSERVATIONS:**

Review of each component:

**Shuddha Swarna:**

Swarna is considered superior among all metals and is kept under saar lauha group (essence or noble metal). It has been used in calcined form (Swarna Bhasma) in debility and sterility. It is considered as best rejuvenator which promotes longevity and prevents ageing. The Swarna Bhasma is sweet in taste and vipaka. It is aphrodisiac, cardiac tonic, promoter of eye-sight as well as intellect and rejuvenating. It counteracts the toxins.

**Shuddha Parada:**

Parada has yogavahi property which incorporates and enhances the properties of drugs with which it is used. Parada is best Rasayana for Dehavada (rejuvenation) as well as Dhatuvada (converting lower metals to noble metals) Mruta Parada (calcined form of mercury) is kshaya-shoshhara (relieves debility), balya (strengthens body), veerya – anand

### Table 1: Therapeutic Action of Swarna Bhasma

<table>
<thead>
<tr>
<th>Reference</th>
<th>Qualities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rasa Ratna Samuchhya</td>
<td>Kshayahara, Agimandyahara, Ojo-dhatu vivardhana, Balakara,</td>
</tr>
<tr>
<td>Rasa Prakasha Sudhakara</td>
<td>Saundarya kanti vardhan, Tridoshaja roga hara</td>
</tr>
<tr>
<td>Ayurveda Prakasha</td>
<td>Vrishya, Balya, Rasayana, Bruhmana, Ayushya</td>
</tr>
<tr>
<td>Rasa Tarangini</td>
<td>Vrishya, Punsanopoyogi</td>
</tr>
<tr>
<td>Rasamruta</td>
<td>Rasayana, Vishaghna, Medhya</td>
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</tbody>
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The time tested properties of Swarna Bhasma are being proved once again by modern researchers through various studies which proves that Swarna Bhasma has:

1. Free radical scavenging activity
2. Anti anxiety and anti-depressant activity
3. Effect on reproductive function in immature female albino rats – significant increase in ovarian and uterine weight and elevation of serum estadiol level were observed following gold chloride (0.2 mg/kg body wt/day) administration in immature female albino rats. Histological study of ovary also showed graffian follicle with ovum in rats proving stimulation of reproductive functions.

4. Effect on modulation of the immune response

**Shuddha Parada:**

Parada has yogavahi property which incorporates and enhances the properties of drugs with which it is used. Parada is best Rasayana for Dehavada (rejuvenation) as well as Dhatuvada (converting lower metals to noble metals) Mruta Parada (calcined form of mercury) is kshaya-shoshhara (relieves debility), balya (strengthens body), veerya – anand
vridhikara (increases sexual desire), kantivardhana (increases luster), increases stri ramana shakti and vihara shakti (i.e. sexual vigour), it is told as adhidevata of strivashikara mantra. (Promoter of lust) 14

**Shuddha gandhaka:**
Gandhaka is pungent in taste, hot in potency and sweet in vipaka (post digestive effect). It is rejuvenating agent, yoga vahi, “sutendra veeryapradha”, (when added with Parada, it enhances its therapeutic power) aphrodisiac, alleviates kapha and vata 15

Here, excess Gandhaka is assimilated / digested in Parada to form a therapeutically extremely effective compound; a polysulphide form probably is termed as gandhaka jarana which plays an important role in detoxification of mercury. It has been claimed that Parada without the process of Gandhaka Jarana cannot be able to cure the diseases, so it must be digested with Gandhaka to make it highly effective i.e. to acquire many pharmacological and therapeutic properties. 16

**Bhavana dravya**
1. **Kumari swarasa**: Kumari 17 - Literally means 'like a young girl or virgin' as it imparts the energy of youth to the reproductive system.

   Kumari increases the blood circulation to Garbhashaya. (Female reproductive system)

   Taste: Bitter, astringent, pungent

   Attribute: Slimy

   Potency: Cooling

   General action: Tonic, aphrodisiac, rejuvenating

   Special action: Rejuvenating

2. **Rakta karpasa Pushpa swarasa** 18:

   Taste: sweet

   Attribute: light

   Potency: kinchita ushna

   General action: vata nashaka

   Special action: Saumanasyajanana effect, an essential factor for garbha dharana.

**Anupan:**
1. **Nagavalli swarasa** 19:

   Special action: Deepana, pachana, sugandhi, vrushya

2. **Dugdha** 20:

   Special action: Sadya shukravridhikara

3. **Madhu** 21:

   Special action: Vrushya, Yogavahi

**DISCUSSION**

Vajikarana is a specialised treatment modality of Ayurveda and proposed benefits are manifold including increased sexual capacity, improving health of future progeny as well as in treatment of many common sexual disorders like infertility, erectile dysfunction and premature ejaculation. Vajikarana drugs also act as Rasayan and have the capability to revitalize all the body elements and restores equilibrium and health. It is a special category of Rasayan, which improves the reproductive system and enhance sexual function.

One such Vajikaran drug is Makardhwaj rasa. In this study each ingredients are evaluated on the basis of classical as well as research updates. Considering their medicinal properties and pharmacological actions it is evident that they contribute to aphrodisiac activity.

Here, mineral and herbal drugs act on synergism which makes the formulation potent enough to treat the infertility. For instance, Vrishya property of Swarna is well incorporated through yogwahi property of Gandhak Jarit Parad, Bhavana sanskar with dravyas like Kumari and Ratka Karpas Pushpa swarasa leads to possible formation of organ metallic compounds and converts heterogeneous form into homogenous form, macro to micro form, rough to smooth form of drugs.

This process of impregnation helps in reducing the particle size of the drugs thus increasing their capacity for absorption into the system. These herbal drugs in the form of juice impart their own therapeutic effects to these metals during processing like Garbhashaya Balyakara and Soumanasyajanan.

Nagavalli swarasa, Dugdha and Madhu as Anupan play a major role in potentiating drug action through their Rasa, Guna, Virya, Vipaka and Prabhav as well as improvement of Roga bala and Rogi bala.

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Other than this, these also help in palatability, easy administration and prevent irritation and can also control adverse drug effect.

**CONCLUSION**

Infertility is defined as inability to conceive even after one year under normal marital relation without contraception. In Ayurveda, this condition is considered as Vandhyatva. This depends on the defected fertility potential of both the male and female part ner.

Treatment principles include Vandhyata chikitsa/ Anartava chikitsa/ Garbhasaya balya chikitsa / Bajarosha chikitsa/ Vrishya- vajikarana oushadha.

Among these treatment principles, Rasa preparations have significant role to play. One such formulation is Makardhwaj Rasa. It is mentioned under Kupipakwa Rasayan (These are medicated preparations prepared in a specially designed glass bottle by gradual heating immersion in sand bath). This formulation is selected as the drug of review in infertility for the present study. To understand its mode of action, each ingredient are analysed with their classical references and research updates.

Thus, it is found that as the compound of these ingredients when administered along with Betel leaf, milk and honey, it has vrishya effect, with trishoghna property and immunomodulatory action. Thus it is an excellent recipe for positive health, longevity and an effective sex tonic to cure infertility.

**REFERENCES**


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