



Formulation And Evaluation Of Gutika For PCOD Treatment

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Abstract—In this investigation Gutika's for Polycystic Ovarian Disease (PCOD) is prepared by hand roll method and were evaluated for physiochemical properties. Gutika is a solid oral dosage form, it is ayurvedic formulation prepared by mixing all drug powder

with liquid like water, cow milk, Swarasa Kwatha, Honey, etc. Polycystic ovarian disease is

caused by hormonal disturbance, endocrine disorders. The cause of PCOD isn't well understood but may involve combination of genetic and environmental factor. It affected female of age group 18 to 44. According to WHO 116 Millions women are affected by PCOD worldwide. The pathophysiological aspects of PCOD mainly focuses on hormonal dysfunction, insulin resistance and hyperandrogenism.

Vatika is a preparation where different medicinal substance is used to make tablet (Vati) and Pills (Gutika). This is done by either by mixing the powdered herbs with honey. This thesis highlights a brief overview of risk, types and pathophysiological Treatment with drugs acting on Ovulation infertility and clinical symptoms of Polycystic Ovarian Disease.

Introduction :

PCOD – Polycystic Ovarian Disease | PCOS – Polycystic Ovarian Syndrome PCOD or PCOS is a condition that affects women's ovaries the reproductive organs that produce progesterone and estrogen hormones that help in regulating the menstrual cycle and also produce small amount of hormones inhibin, relax and male hormones called androgens. Almost 10% of women in the world is suffering from PCOD. In

compare to PCOD women with PCOS produce higher-than normal amounts of male hormones. This hormone imbalance causes them to skip menstrual periods and makes it harder for them to get pregnant. Besides unpredictable hormonal behavior, this condition can trigger.

Diabetes

-Infertility

-Acne

-Excessive Hair Growth

What is PCOD Problem

PCOD (Polycystic Ovarian Disease) is a medical condition in which the woman ovaries produce immature or partially mature eggs in large numbers and over the time these become cysts in ovaries. Due to this ovaries become large and secrete large amount of male hormones (androgens) causing infertility, irregular menstrual cycles, hair loss and abnormal weight gain PCOD can be controlled by diet and lifestyle modifications.

PCOS (Polycystic Ovary Syndrome) is a metabolic disorder in which the woman affected by hormonal imbalance in their reproductive years (between ages 12 and 51). Due to increase level of male hormones females might skip menstrual periods, have irregular ovulation making it hard to get pregnant, get abnormal hair growth on the body and face simultaneously it can lead to heart disease and diabetes in long term. PCOS is a serious medical condition, and it requires proper medical attention or surgical treatment. ovulation making it hard to get pregnant, get abnormal hair growth on the body and face simultaneously it can lead to heart disease and

diabetes in long term, PCOS is a serious medical condition, and it requires proper medical attention or surgical treatment.

Causes of PCOD:

Cause is still unknown, However, the association of PCOD with low-grade inflammation, excess insulin, production of male hormones (Hyperandrogenism) in high quantity and genetics can be found. Early age of menarche, unhealthy lifestyle and pollution are some of the contributing factors of PCOD

INTRODUCTION OF GUTIKA :

Gutika (tablet dosage form) is an important drug delivery system in Ayurveda. Acharya Sharangadhara in 13th century AD was the 1st person who explained in detail about Bhaishajyakalpana (bhaishajya means medicine; Kalpana means dosage forms) in Sharangadhara Samhita. He explained various kalpanas and in one of these chapters he explained about vati. Vatikalpana is a pharmaceutical procedure in which the powder of raw drugs (herbal or herbominerals) triturated together with certain juices, infusions, decoctions or even honey and then are prepared in the form of pills or tablets

General methods of preparation:

Methods can be divided into 2 categories:

1. With the aid of heat:

2. Without the aid of heat:

1. With the aid of heat:

Desired quantity of base drugs like jaggery, sugar, guggul are taken in a clean wide mouthed stainless steel vessel of suitable size. Required quantity of water is added and the contents are heated over fire with frequent stirring. Once the syrup is formed, the fine powder of drugs is added in small quantities and stirred well till the desirable consistency is obtained. Then the mass is rolled into pills of desired size and shape. The prepared pills are later dried in shade and stored in airtight containers.

2. Without the aid of heat:

a) Desired quantity of base drugs like guggul and jaggery are pounded well in mortar and pestle. Fine powder of drugs are then added in small quantities. When the drug mass attains the required consistency, it is then rolled into pills of desired

b) Fine powder of medicinal drugs is taken in khalva yantra/mortar and pestle. Specified liquids like water, cow's milk, swarasa, kwatha, honey etc are added in required quantity. The mixture is dried in shade and stored in airtight containers

Characteristics of Good Quality Pills/Tablets:

1. It should contain the stated dose within permitted limits.
2. It should be sufficiently hard to withstand reasonable handling from the time of manufacture until they reach the consumer.
3. It should be a suitable size for easy administration
4. It should be free from physical imperfections and foreign matter.
5. It should disintegrate readily.
6. It is preferable to use micro fine powder for the preparation of Vati.

LITERATURE REVIEW:

1. Susan Arentz, Jason Anthony Abbott, [...], and Alan Bensoussan studied Herbal medicine for the management of polycystic ovary syndrome (PCOS) and associated oligo/amenorrhoea and hyperandrogenism; a review of the laboratory evidence for effects with corroborative clinical findings.

2. Mohammed Azeemuddin, Suryakanth D. Anturlikar, Mallappa Onkaramurthy Mirza R. Baig, Basti K. Ashok, Raghavendra P. Rao, Mohamed Rafiq, and Paramesh Ranges studied Effect of "DXB-2030," a Polyherbal Formulation, on Experimental Polycystic Ovary Syndrome Associated with Hyperandrogenism.

3. Zahraabasian, Mahmoud Rafieian studied A review on role of medicinal plants in polycystic ovarian syndrome: Pathophysiology, neuroendocrine signaling, therapeutic status and future prospects.

4. Jayshree Dawane, Vijaya pandit, Kapilkhade, Sonali Suryawanshi, Asmitaweale, Madhuripawar, Supriya Bhalerao studied the efficacy of herbal formulation Nisāmalakī in animal model of polycystic ovarian disease syndrome

5. Shantaram Gajanan Khanage, Tarkasband Yogita Subhash, Inamdar Rahat Bhaiyasaheb studied Herbal drugs for the treatment of Polycystic ovary syndrome (PCOS) and its complications

6. AV Kamble, SP Dhamane, AS Kulkarni, VV Potnis studied Review on effects of herbal extract for the treatment of polycystic ovarian syndrome (PCOS)

AIM & OBJECTIVES:

Aim: FORMULATION AND EVALUATION OF GUTIKA FOR PCOD

TREATMENT

Objectives:

To study the formulation characteristics.

To formulate and evaluate Gutika for PCOD treatment.

To characterize prepared Gutika for physiochemical parameter

Drug Profile

A. Liquorice:



Synonym: Jethimadh, Mulethi, Glycyrrhiza

Family: Leguminosae

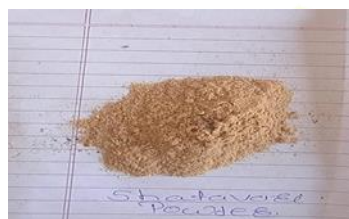
Biological Source: Liquorice consists of peeled and unpeeled roots, stolons, stem of Glycyrrhiza glabra Linn.

Chemical Constituents: Glycyrrhizin (6-8%) [Sweet instant 50 time more than sucrose]

Liquiritin isoliquiritin are responsible for yellow colour. Glucose, sucrose, asparagin, gum, protein, fats, resins, traces of tannin. Glycyrrhizic acid produces glycyrrhizic acid and glycyrrhizin on hydrolysis.

Uses: It contains chemical constituents glycyrrhizin which has anti-inflammatory properties also help to metabolise sugar and balance hormones

Shatavari:



Synonyms: Shatamuli.

Family: Liliaceae.

Biological Source: The shatavari mostly comprises of the dried roots and the leaves of the naturally occurring plant known as Asparagus racemosus Will, belonging to the

Chemical Constituent: The shatavari contains four steroidal saponins usually designated as shatavarin I, IV present collectively to the extent of 0.2%; however, shatavarin I is the major glycoside present

Uses: It helps to maintain duration of menstrual cycle and also normalize the cycle and blood flow and also improves fertility

Jamun Powder:



Synonym: Syzygium cumini, Malabar plum, Java plum, black plum, jamun or jambolan

Family: Myrtaceae

Biological source: Jamun obtained from dried fruit of plant Syzygium jambolan. Genus: Syzygium Species: S. cumini

Chemical constituents: Anthocyanins, ellagic acid, glucoside, isoquercetin, kaempferol and myricetin are

among the compounds found in jambolan. The alkaloid jambosine and the glycoside antimellin or jambolin

Uses: It normalized blood sugar level

Ginger:



Synonyms: Rhizomazingiberis, Zingiber.

Family: Zingiberaceae

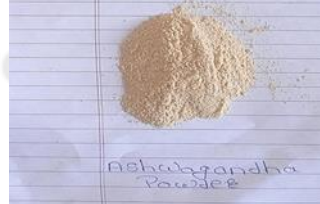
Biological Source: Ginger consists of the dried rhizomes of the Zingiber officinale Roscoe,

Chemical Constituents:

Ginger contains 1 to 2% volatile oil, 5 to 8% pungent resin, mass and starch. The volatile oil is responsible for the aromatic odour and the pungency of the drug is due to the yellowish oily body called gingerol which is odourless. Volatile oil is composed of sesquiterpene hydrocarbon like α -zingiberol; α -sesquiterpene alcohol abisabolene, α -farnesene, α -sesquiphellandrene. Less pungent components like gingerone and shogaol are also present. Shogaol is formed by the dehydration of gingerol and is not present in fresh rhizomes.

Uses: It contains chemicals like shogaol, paradox, gingerol and zingerone, this chemical lowers inflammation and relieves period pain. It also keeps the immune system strong

Ashwagandha:



Synonyms: Withania root. Ashwagandha, Clustered Winter cherry

Family: belonging to

Biological Source: It consists of the dried roots and stem bases of Withania somnifera Dunal

Chemical Constituents: The plants contain the alkaloid withanine as the main constituent and somniferine, pseudowithanine, tropine and

pseudotropine, hygrine, isopelleterine, anaferrine, anahygrine and steroid lactones. The leaves contain steroid lactone, commonly known as withanolides.

Uses: According to study published in journal of evidence based integrative medicine this herb help a to reduce serum cortisol level. So stress level decreases. It decreases food craving this improve eating habits lead to weight loss. It also helpful to improve hair loss problem. So relieve symptom of hair loss related to PCOD

Turmeric:



Synonyms: Curcuma longa

Family: Zingiberaceae

Biological source: Turmeric is dried rhizomes of Curcuma longa

Chemical constituent: Major active ingredients of turmeric include three curcuminoids; curcumin (diferuloylmethane, the primary constituent responsible for yellow color of turmeric), demethoxycurcumin, and bisdemethoxycurcumin

Uses: It helpful to boost immunity.

It help in reduce irregular period symptoms, acne weight gain.

It also help in resolve sleep problem

Material and method

1) Material used.

Sr. No	Name of Herb
1	Ashwagandha
2	Shatavari
3	Turmeric
4	Ginger
5	Liquorice
6	Jamun

Method of Preparation of Gutika Tablet .

Evaluation of Tablets:

- 1. Hardness :** Three tablets from each batch were selected and hardness was measured using Monsanto hardness tester to find the average tablet hardness.



2. Thickness:



Thickness and diameter were measured using a digital vernier caliper. Three tablets of each formulation were picked randomly and thickness was measured individually.

3. Friability (%F):



Twenty tablets from each batch were selected randomly and weighed. These tablets were subjected to friability testing using Roche friabilator for 100 revolutions. Tablets were removed, de-dusted and weighed again.

Following formulawas used to calculate the friability %F-1-(loss in weight initial weight) 100. %

Friability of tablets less than 1% was considered acceptable.

4. Disintegration Time:



Conventional DT apparatus uses a large amount of water with very rapid up and down movements. In a simplest method to overcome this problem, 6 ml of phosphate buffer of pH 6.8 was taken in a 25 ml measuring cylinder. Temperature was maintained at $37 \pm 2^\circ\text{C}$. Gutika was put into it and time required for complete disintegration of the tablet was noted.

Result and discussion

The present study was formulated and evaluate Gutika for PCOD treatment In this study gutika formulation of adequate mechanical strength where prepared by handroll method and evaluated by for various parameters

1)Hardness:

Three tablets from each batch were selected and hardness was measured using Monsanto hardness tester to find the average gutika hardness. It was found to be 2kg/cm²

2) Friability (%F):

Twenty gutika from each batch were selected randomly and weighed. These tablets were subjected to friability testing using Roche friabilator for 100 revolutions. Tablets were removed, de-dusted and weighed again. Following formula was used to calculate the friability. It was found to be 0.55%

3) Disintegration Time:

Conventional DT apparatus uses a large amount of water with very rapid up and down movements. In a simplest method to overcome this problem, 6 ml of phosphate buffer of pH 6.8 was taken in a 25 ml measuring cylinder. Temperature was maintained at 37±2°C. Gutika was put into it and time required for complete disintegration of the gutika was found to be 22mins.

SUMMARY AND CONCLUSION:

The investigation was aimed at formulation of Gutika for PCOD treatment. Formulations were evaluated for various parameters and the following conclusions were derived from the result obtained:

1. Hardness of the Gutika was found to be between 4.9 to 5.
2. Negligible friability of Gutika was observed.
3. Drug content was found to be uniform and consistent.
4. The disintegration test was performed and it was successful.
5. The dissolution test for Gutika was performed, and it was done successfully.

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4. Ashwagandha Textbook of pharmacognosy by S.S.Handa, V.K.Kapoor
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7. Heinrich, Joanne Barnes, Simon Gibbons, Elizabeth M. Williamson

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