Herbs Used as Source for Treatment of Pcos

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***Abstract*—Polycystic Ovary Syndrome (PCOS) is a complex endocrine and metabolic disorder commonly affecting women of reproductive age, characterized by ovulatory dysfunction, hyperandrogenism, and polycystic ovaries. Current allopathic treatments are often associated with side effects and limited long-term effectiveness, encouraging the exploration of herbal alternatives. This study focuses on the formulation and therapeutic potential of a polyherbal vati consisting of Shatavari (Asparagus racemosus), Ashwagandha (Withania somnifera), Manjishtha (Rubia cordifolia), Gokharu (Tribulus terrestris), and Licorice (Glycyrrhiza glabra). These medicinal plants are known for their synergistic properties, including hormonal balancing, anti-androgenic activity, antioxidant action, and reproductive health improvement. The objective of this research is to evaluate the pharmacological relevance of these herbs in managing PCOS symptoms such as insulin resistance, menstrual irregularity, ovarian dysfunction, acne, hirsutism, and stress-related hormonal imbalance. The formulation may serve as a promising natural therapy with fewer side effects, improved patient compliance, and better long-term health outcomes in women suffering from PCOS.**

***Index Terms*—PCOS, Herbal vati, Shatavari, Ashwagandha, Manjishtha, Gokharu, Licorice, Hormonal Balance, Women's Health**

I. INTRODUCTION

Polycystic Ovary Syndrome (PCOS) is one of the most widespread endocrine disorders affecting 6–20% of women in reproductive age groups worldwide. It is clinically manifested by chronic anovulation, elevated androgen levels, infertility, weight gain, acne, and metabolic abnormalities including insulin resistance and dyslipidemia. The herbs selected for this formulation — Shatavari, Ashwagandha, Manjishtha, Gokharu, and Licorice — are traditionally used to support hormonal harmony, enhance fertility, purify blood, reduce inflammation, and strengthen reproductive tissues.

1.1. Pcos (Polycystic Overian Syndrome): -

PCOS is a hormone-related disorder and affects irregular periods. PCOS is categorized into four main types:

1. Insulin-resistant PCOS;
2. Inflammatory PCOS;
3. Post-pill PCOS;
4. Hidden cause of PCOS.

1.2. Organs Involved in PCOS

1. Ovary—the female gonad organ presents at either side of the uterus;
2. Adrenal gland—the gland which is placed just above both of the kidneys;
3. Pancreas—the gland which produces insulin in our body;
4. Pituitary gland—the gland just below the brain, which is responsible for hormone control.

In PCOS, the ovaries produce more androgen, which inhibits the maturation of ovarian follicles. Anovulation results from an improperly formed and unreleased ovum.

1.3. Symptoms of PCOS

The symptoms of PCOS can get worse if one is overweight or obese. While these symptoms can be Absent periods, insulin resistance, ovarian cysts, irregular periods, weight gain, acne, as shown In figure

fig no.01. symptoms of pcos

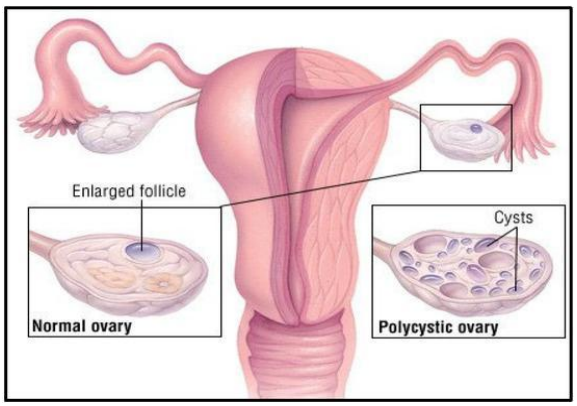

fig no .02. overy with cyst

1.4. Causes of PCOS: -

- Gene defect perturbs the biochemical pathway & leads to dysfunction of an ovary
- Contraceptive pills;
- Strong stimulation in adrenals in childhood;
- Raised insulin levels;
- Hormonal imbalance and stress.

1.5. Histological Features of PCOS

(1) Whole ovarian hypertrophy, indicated with a thickened capsule (>100 μ);
(2) Increased number of sub follicular cysts;
(3) Scarcity of corporeal lutea or albicantia, hyperplasia, and fibrosis of the ovarian stroma.

1.6. COVID-19 Infection in PCOS Women

Obesity, hypertension, type 2 diabetes, metabolic syndrome, ethnic minority group, high cytokine level, high androgen level, and low vitamin D levels are all common risk factors for PCOS severity and cardiometabolic illnesses.

Vitamin D levels have been linked to the severity of several PCOS symptoms, including high testosterone, insulin resistance, and cardiometabolic disease.

Notably, according to statistical analysis data, vitamin D supplementation may significantly reduce total testosterone and C-reactive protein circulating levels in PCOS women.

1.7. Necessity to Study PCOS

Early diagnosis and treatment help prevent long-term complications, such as infertility, metabolic syndrome, obesity, diabetes, and heart disease.

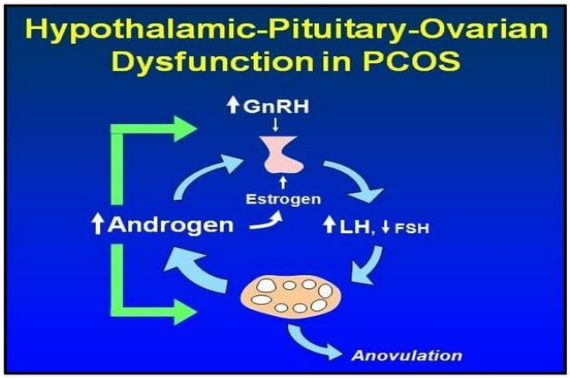

Figure 3. Hypothalamus involvement in PCOS.

In India, two out of every ten women have PCOS, according to a study by the PCOS Society. Overall, six teenage girls are diagnosed with PCOS out of every ten women. According to a study by the AIIMS department of endocrinology and metabolism, PCOS affects 20–25% of women of reproductive age.

II. LITERATURE REVIEW

1.Ayurveda Review on Herbal Medicines for PCOS

Susan Arentz et al. (2014) conducted a detailed review titled “Herbal medicine for the management of polycystic ovary syndrome (PCOS)” published in BMC Complementary and Alternative Medicine, Volume 14, Article 511, pp. 1–19.. The authors reported that herbal drugs improved menstrual irregularities, ovulation, insulin resistance, and androgen imbalance with fewer adverse effects.

2. Review on Herbal Compounds in PCOS

Sareh Dashti et al. (2026) published “Herbal compounds in the treatment of polycystic ovary

syndrome: an updated systematic review" in the Journal of Ovarian Research, Volume 19, Article 132, pp. 1–25. The review highlighted the therapeutic role of herbs such as Ashwagandha, liquorice, in reducing PCOS symptoms including hormonal imbalance and ovarian dysfunction.

3. Systematic Review on Herbs Used in PCOS
Jada Naga Lakshmi et al. (2023) published "Herbs as a Source for the Treatment of Polycystic Ovarian Syndrome: A Systematic Review" in BioTech, Volume 12(1), pp. 1–18. The review discussed several medicinal plants effective against PCOS due to their anti-inflammatory, antioxidant, and hormone-balancing activities. The authors concluded that herbal formulations are safer alternatives to synthetic drugs.

4. Review on Nutritional Supplements and Herbal Medicines
Susan Arentz et al. (2017) conducted a systematic review and meta-analysis titled "Nutritional supplements and herbal medicines for women with polycystic ovary syndrome" published in BMC Complementary and Alternative Medicine, Volume 17, Article 500, pp. 1–16.

5. Ashwagandha in PCOS
Chan-Young Kwon et al. (2020) reviewed herbal medicines for PCOS in Frontiers in Pharmacology, Volume 11, pp. 1–14. The study reported that Ashwagandha reduces stress-induced hormonal imbalance and improves insulin sensitivity in women suffering from PCOS.

6. Shatavari for Female Reproductive Health
Maria Ida Amabile et al. (2024) reviewed Ayurvedic herbs for female reproductive disorders in Cureus, pp. 1–12. The review stated that Shatavari possesses phytoestrogenic activity and supports hormonal balance, ovulation, and menstrual regulation.

7. Licorice in Hormonal Disorders
Sareh Dashti et al. (2026) reported that licorice helps reduce androgen levels and improves endocrine disturbances in PCOS patients through anti-androgenic effects.

8. Gokhru in Reproductive Disorders
Several Ayurvedic studies reviewed in PCOS herbal formulations reported that Gokhru supports follicular development, enhances ovulation, and improves reproductive health due to its rejuvenating and adaptogenic properties.

9. Manjistha in PCOS Management
Review articles on Ayurvedic management of PCOS described Manjistha as an important blood purifier and anti-inflammatory herb useful in reducing acne, obesity-associated inflammation, and metabolic disturbances associated with PCOS.

10. Therapeutic Effects of Herbal Medicines in PCOS
Chan-Young Kwon et al. (2020) published a review titled "Therapeutic Effects and Mechanisms of Herbal Medicines for Treating Polycystic Ovary Syndrome" in Frontiers in Pharmacology, Volume 11, pp. 1–18. The review explained that herbal medicines improve ovulation, insulin resistance, hyperandrogenism, and ovarian morphology through antioxidant and anti-inflammatory mechanisms. The study highlighted Ashwagandha, cinnamon, licorice, and Aloe vera as promising herbal therapies for PCOS management.

11. Review on Herbal Plants and Formulations for PCOS
A review article titled "Exploration of Herbal Medicinal Plants and Formulations Available for the Treatment of PCOS" discussed various herbal dosage forms including vati, tablets, syrups, and capsules for PCOS management. The review reported that herbal formulations help regulate menstruation, reduce androgen levels, and improve fertility with fewer adverse effects compared to synthetic medicines. The article appeared in Journal of Drug Delivery and Therapeutics, pp. 1–15.

12. Literature Review on Female Reproductive Health Herbs
Maria Ida Amabile et al. (2024) published "Ayurvedic Herbal Medicines: A Literature Review of Their Applications in Female Reproductive Health" in Cureus, pp. 1–20. The review emphasized the role of Ashwagandha and Shatavari in female hormonal balance and reproductive disorders

including PCOS, infertility, dysmenorrhea, and menstrual irregularities.

13. Review on Herbal Remedies and PCOS
Jada Naga Lakshmi et al. (2023) in BioTech, Volume 12(1), pp. 1–17, reviewed medicinal herbs used in PCOS treatment. The authors explained that phytochemicals such as flavonoids, alkaloids, saponins, and phenolic compounds contribute to anti-obesity, anti-diabetic, and hormone-regulating effects in PCOS.

III. AIM

- To formulate and evaluate a herbal Vati preparation containing Shatavari, Ashwagandha, Licorice, Manjistha, and Gokhru for the management of Polycystic Ovary Syndrome and to study its therapeutic effectiveness and safety.

IV. OBJECTIVES

- To prepare a herbal Vati formulation using selected Ayurvedic herbs for PCOS management.
- To study the physicochemical properties of the prepared Vati formulation.
- To evaluate the role of herbal ingredients in regulating hormonal imbalance associated with PCOS.
- To assess the effectiveness of the formulation in reducing symptoms such as irregular menstruation, obesity, acne, and ovarian cyst formation.
- To study the antioxidant and anti-inflammatory activities of the herbal formulation.
- To evaluate the safety, stability, and quality control parameters of the prepared Vati.
- To compare the therapeutic benefits of the herbal formulation with existing conventional treatments for PCOS.

V. HERBS USED IN TREATMENT OF PCOS

Herb	Botanical Name	Therapeutic action	Role in Formulation
Shatavari	Asparagus racemosus	Phytoestrogenic, Galactagogue, Reproductive tonifier	Balances female hormones, promotes ovulation
Ashwagandha	Withania somnifera	Adaptogen, Anti-stress, Improves energy	Reduces cortisol, supports menstrual cycle
Manjishtha	Rubia cordifolia	Blood purifier, Anti-inflammatory, Detoxifier	Improves skin health in PCOS acne & pigmentation
Licorice (Yashtimadhu)	Glycyrrhiza glabra	Anti-androgenic, Demulcent, Anti-ulcer	Helps reduce excess testosterone, supports digestion
Gokharu (Gokshura)	Tribulus terrestris	Pro-fertility, Diuretic, Anabolic	Improves ovarian function, supports fertility

Mechanism of Action in PCOS:-
- Regulates HPO-axis (Hypothalamic-Pituitary-Ovarian),
- Restores menstrual cycle regularity
- Reduces hyperandrogenism (acne/hair fall/hirsutism) ,
- Improves insulin sensitivity and metabolism
- Reduces stress-related endocrine disturbance,
- Supports endometrial health and ovulation.

1. Shatavari: -
- Synonym: -asparagu ,satmuli
- Biological source: - The drug is derived from tuberous roots of Asparagus racemosus wild
- Family: -Liliaceae
- Part of use: - Dried roots

fig.no.04 .shatavari

PCOS and Shatavari: -
PCOS is caused by a harmonal imbalance in a women's body.

According to research, when women take 5 grammes of shatavari, their hormones are balanced. shatavari naturally boosts antioxidant levels in a women body.It improves menstruation while decreasing fertility.

How it is possible in pcos:
In the case of pcos ,we need medications that dissolve cysts,such as kanchnaar.However ,shatavari is a herb to balance the hormones that are disrupted in pcos, maintain hormone levels, and supports the HPO axis and plexus. preserves ovarian shatavari promotes menstrual cycle duration (3 to 7 days) , menstrual cycle (28 to 35 days), and blood flow during menstruation.

Role of Shatavari in PCOS Management
PCOS is characterized by hyperandrogenism, irregular menstrual cycles, ovarian cysts, insulin resistance, and infertility. Shatavari helps in managing these symptoms through the following actions:

1. Hormonal Balance
- Regulates ovarian hormones, supports estrogen production
- Helps reduce androgen (male hormone) levels
- Promotes regular ovulation and menstrual cycle

2. Insulin Sensitivity
- Improves glucose metabolism and reduces insulin resistance
- Helps in weight management

3.Anti-Inflammatory & Antioxidant Action
- Root extract contains antioxidants that reduce oxidative stress
- Lowers inflammation associated with PCOS

4.Improves Reproductive Function
- Enhances follicular development, improves fertility
- Acts as galactagogue in lactation support

5. Stress & Mood Relief
- Exhibits adaptogenic properties
- Helps reduce cortisol, which plays a role in hormonal imbalance

Phytoconstituents Responsible
- Shatavarins I–IV (steroidal saponins)
- Isoflavones
- Alkaloids
- Polyphenols
- Vitamins & minerals

These contribute to estrogenic, anti-inflammatory, and immunomodulatory effects.

2. Ashwagandha: -
- Synonyms:- Indian ginseng
- Biological source: -is the dried root and sten base of the plant withania somnifera (linn).
- Family: -solanaceae
- Part used: - dried root

fig no.05 ashwagandha

Ashwagandha can help balance cortisol levels and manage the symptoms of PCOS.
It reduces the activity of the hypothalamic pituitary adrnal (HPA) axis in a system in your body that regulates stress and your body's response to it.

Polycystic Ovarian Syndrome (PCOS) is a hormonal and metabolic disorder seen in women of reproductive age. It is commonly associated with:

- Irregular menstrual cycles
- Increased androgens (male hormones)
- Infertility
- Insulin resistance
- Stress and anxiety

Ashwagandha (Withania somnifera), also known as Indian Ginseng, is a renowned adaptogenic herb in Ayurveda traditionally used to balance the body's stress response, enhance immunity, and regulate hormones.

Thyroid Support

Many women in pcos have low thyroid function. A 2013 study found that about 22.5% of women with PCOS had hypothyroidism compared to 8.75% in controls.

When your thyroid isn't working well, it can lead to higher levels of testosterone in your body. This happens because there's less of a protein called sex hormone-binding globulin (SHBG) that usually binds to testosterone and keeps its levels balanced.

In PCOS, there are often imbalances in other hormones like estrogen and progesterone, which can increase thyroid antibodies. These antibodies are proteins that can harm the thyroid gland and make thyroid problems worse.

Studies have shown that Ashwagandha can increase testosterone levels in men, and while the effect on women, especially those with PCOS, isn't fully understood or studied, it might also raise testosterone levels. Specific research directly measuring its impact on testosterone levels in women is currently lacking.

For women with PCOS who already have high testosterone levels, taking Ashwagandha could potentially worsen symptoms like unwanted hair growth, hair loss, acne, and irregular menstrual cycles.

3. Manjishtha:-

- Synonyms: -manjit, Indian madder
- Biological source:-it consists of the dried root of the plant species rubia cordifolia
- Family: - Rubiaceae
- Part used:-dried root

Manjishtha in PCOS — How it Helps

Manjishtha is a powerful Ayurvedic herb best known as a blood purifier. Many symptoms of PCOS are hormonal imbalance, insulin resistance, inflammation, and acne, where Manjishtha can support healing.

fig .no.06 manjistha

Mechanisms of Action

1. Balances female hormones
   - Supports estrogen and progesterone regulation
   - May reduce LH/FSH imbalance
2. Reduces androgen levels
   - Helps control acne, pimples, male-pattern hair growth
3. Enhances liver detoxification
   - Removes metabolic wastes and excess hormones contributing to PCOS
4. Improves blood circulation to reproductive organs
   - Promotes follicular development and normal ovulation
5. Corrects metabolic dysfunction
   - Supports glucose utilization and prevents weight gain

4. Gokharu: -

- Synonym: - Gokshuru
- Biological source: - It consist of dried root of Tribulus terristris linn.
- Family: -zygophyllaceae
- Part used:-dried root extract

Manage to help the symptoms of primarily by aiding in hormonal balance, reducing cyst size, and supporting reproductive functiuons

fig no. 07 gokharu

How Gokharu Helps in PCOS

Therapeutic Action	PCOS-related Benefit
1.Anti-androgenic:	Helps reduce excess male hormones → reduces acne, hair fall & hirsutism
2.Ovulation-inducing: -	Supports regular menstrual cycles & improves egg release
3.Insulin sensitizing:-	Helps manage insulin resistance → reduces weight gain risk
4Anti-inflammatory: -	Reduces inflammation in ovaries & improves metabolic health
5.Improves fertility: -	Enhances ovarian function & increases conception chances
6.Diuretic effect: -	Helps reduce bloating & water retention common in PCOS

Active Compounds Responsible

- Protodioscin
- Saponins
- Flavonoids
- Alkaloids

These compounds help enhance ovarian function, improve estrogen-progesterone balance, and reduce high testosterone levels.

5. Licorice (Glycyrrhiza glabra):-

- Synonym: -glycerrhiza glabra
- Biological source: -it consist of dried, peeled,or unpeeled roots, stolons and stems of the glycerrhiza glabra.
- Family:-fabaceae
- Part used:- dried root

It is used in the management of PCOS for its anti-androgenic, estrogen-like ,anti -inflammmatory , and insulin -sensitizing properties

Pharmacologically Active Constituents

- Glycyrrhizin
- Glabridin
- Liquiritigenin
- Isoliquiritigenin

fig.no.08 licorice

Therapeutic Role in PCOS

- Helps reduce symptoms like hirsutism, acne, and hair loss due to anti-androgenic action.
- Promotes regular ovulation and improved fertility.
- Supports healthy metabolism, helping in weight control and reducing metabolic syndrome risk.
- Enhances liver detoxification of hormones.

Pharmacologically Active Constituents

- Glycyrrhizin
- Glabridin
- Liquiritigenin
- Isoliquiritigenin
- Flavonoids & saponins

These compounds contribute to endocrine balancing and anti-inflammatory effects.

Licorice Improves Estrogen and Progesterone Levels

As testosterone production at the ovary decreases it frees up the ovary and follicles to produce estrogen. Some women with PCOS have insufficient estrogen levels for the pituitary gland to make hormones stimulating ovulation.

Licorice root has estrogen-like qualities that can act on estrogen receptor sites to help improve estrogen balance. It is often used in the period of falling

estrogen in peri-menopause to help decrease symptoms like night sweats and hot flashes.
As testosterone levels decrease and estrogen levels normalize ovulation can occur more readily. This can improve both the frequency of progesterone production and the amount of progesterone the ovary can produce post ovulation.

Licorice Lowers Inflammation in PCOS
Low-grade systemic inflammation is something we have recently seen women experience more effects of if they have PCOS.

Flavonoids:
Licorice root contains various flavonoids, including liquiritin and isoliquiritin, which have been shown to have anti-inflammatory effects.

Antioxidant activity:
Licorice root possesses antioxidant properties, which can help combat oxidative stress and inflammation.
Modulation of the immune response:
Licorice root has been found to modulate the immune response by regulating the production of immune cells and cytokines. It can help regulate the balance between pro-inflammatory and anti-inflammatory cytokines, leading to a dampened inflammatory response.

- Shatavari acts as a female reproductive tonic and supports normal ovulation.
- Ashwagandha helps regulate cortisol levels and reduce stress-induced hormonal imbalance.
- Manjishtha improves metabolic detoxification and reduces inflammation contributing to PCOS.
- Gokharu enhances ovarian function and fertility by improving reproductive hormone levels.
- Licorice shows anti-androgenic effects and improves insulin sensitivity.

The combination of these herbs is expected to work synergistically to target the root causes of PCOS, offering a natural, multi-targeted therapeutic approach. Therefore, developing a standardized herbal tablet composed of these herbs may provide a safe, cost-effective.

VI. METHODOLOGY

- Vati Formulation: -

1. Preparation of Herbal Powder

1. Plant materials are washed and shade dried for 7–10 days.
2. Dried materials are pulverized separately using grinder.
3. Powders are passed through sieve no. 80 for uniform particle size.
4. Powders are stored in airtight containers.

fig .no. 09 powder

2.Formulation of Herbal PCOS vati

Sr.No	Ingredient	Weight (mg)
1	shatavari	120mg
2	Ashwagandha	100mg
3	Manjishtha	100mg
4	Gokharu	80mg
5	licorice	80mg
7	Gum acacia	20mg

Procedure

1. Dry all herbal powders separately.
2. Sieve through mesh no. 80 for uniform particle size.
3. Accurately weigh all ingredients.
4. Mix powders uniformly using geometric mixing.
5. Prepare binder solution using gum acacia and purified water.
6. Add binder slowly to obtain suitable dough mass.
7. Roll and prepare vati of approximately 500 mg each.
8. Dry at room temperature or tray dryer below 50°C.
9. Store in airtight container.

fig.no.10. herbal vati

Evaluation parameter: -

1. Organoleptic Evaluation

Study of physical appearance and sensory characters.

Color,odor,taste ,shape ,surface texture

2. Size and Shape

Determination of uniformity of prepared vati.

Diameter,Thickness,Roundness

3. Weight Variation Test

Checks uniformity of weight of tablets/vati.

Procedure: -

1. Randomly select 20 vati.
2. Weigh individually.
3. Calculate average weight.
4. Compare individual weights with average weight.

Significance

Ensures dose uniformity.

4. Hardness Test

Measures mechanical strength of vati.

Significance

Prevents breakage during handling and transport.

Maintains integrity of formulation.

5. Friability Test

Determines resistance to abrasion.

Procedure

Vati are rotated in friabilator.

Percentage weight loss is calculated.

Acceptable Limit

Usually less than 1%.

6. Disintegration Test

Measures time required for vati to break into smaller particles in a specified medium.

Significance

Indicates drug release ability

9.. Moisture Content

Determines amount of moisture present.

Methods

1. Loss on drying
2. Moisture balance method

Significance

Prevents microbial growth and increases stability.

10.pH Determination

Measures acidity or alkalinity of formulation.

Importance

Helps determine stability and compatibility.

11.. Stability Studies

Evaluates stability under different environmental conditions.

Parameters Observed

1. Color change
2. Odor change
3. Hardness
4. Moisture
5. Drug potency

12. Phytochemical Screening

Identification of active phytoconstituents.

Examples;

Alkaloids,Flavonoids,Tannins,Glycosides,Saponins

13. Uniformity of Drug Content

Ensures equal distribution of active ingredients in each vati.

VII. RESULT

The present study focused on the formulation and evaluation of a polyherbal vati containing Ashwagandha, Shatavari, Manjistha, Licorice, and Gokhru. The formulation was prepared in the form of approximately 500 mg vati using herbal powders and gum acacia as a binding agent.

Three batches of the formulation were prepared successfully by drying, sieving, mixing, granulating, and rolling the herbal ingredients into vati form. The prepared vati showed uniform appearance, acceptable hardness, low friability, and proper disintegration

time. Organoleptic properties such as color, odor, and texture were also found satisfactory.

1.Organoleptic Evaluation of Herbal PCOS Vati

Sr.no.	Parameter	Observation
1.	color	Brown
2.	Odour	Characteristic aromatic
3.	Taste	Slightly bitter
4.	Shape	Round
5.	Texture	Smooth

2.Physiological Evaluation

Sr.no	Test	Result
1.	Average weight	500mg
2.	Hardness	4.5kg\cm
3.	Friability	0.65%
4.	Disintegration time	24 min
5.	Moisture content	3.2%
6.	PH	6.5

VIII. DISCUSSION

The present study was carried out to formulate and evaluate a polyherbal vati containing Ashwagandha, Shatavari, Manjistha, Licorice, and Gokhru in the form of 500 mg vati. The formulation was developed to combine the therapeutic properties of different medicinal herbs into a single convenient dosage form

The organoleptic evaluation showed that the prepared vati had characteristic herbal odor, brown color, and slightly bitter taste due to the presence of various phytoconstituents. The prepared vati did not show any visible cracks or deformation, indicating proper formulation and drying conditions.

Evaluation studies such as weight variation, hardness, friability, and disintegration were carried out to determine the quality of the formulation. The weight variation results were within acceptable limits, indicating uniformity in vati weight and proper mixing of ingredients. Hardness and friability studies confirmed that the vati possessed sufficient strength to withstand handling and transportation without breaking. The disintegration time was also found within acceptable range, suggesting proper release of active constituents after administration.

The selected herbs provide multiple pharmacological activities. Ashwagandha is known for adaptogenic and rejuvenating properties, while Shatavari supports hormonal balance and vitality. Manjistha possesses antioxidant and blood purifying activities. Licorice acts as an anti-inflammatory and soothing agent, whereas Gokhru is traditionally used as a tonic and urinary supportive herb. The combination of these herbs may produce synergistic therapeutic effects.

Overall, the prepared polyherbal vati showed satisfactory pharmaceutical properties and stability. The study indicates that the formulation method is simple, economical, and suitable for preparation of herbal vati. Further pharmacological and clinical studies are required to confirm the therapeutic efficacy and safety of the developed formulation.

IX. SUMMARY

The present study focused on the formulation and evaluation of a polyherbal vati containing Ashwagandha, Shatavari, Manjistha, Licorice, and Gokhru. The formulation was prepared in the form of approximately 500 mg vati using herbal powders and gum acacia as a binding agent.

batches of the formulation were prepared successfully by drying, sieving, mixing, granulating, and rolling the herbal ingredients into vati form. The prepared vati showed uniform appearance, acceptable hardness, low friability, and proper disintegration time. Organoleptic properties such as color, odor, and texture were also found satisfactory.

The selected herbs possess important medicinal properties including adaptogenic, antioxidant, anti-inflammatory, rejuvenating, hormonal balancing, and tonic activities. The combination of these herbs may provide synergistic therapeutic effects and improve patient compliance due to convenient dosage form.

Evaluation parameters confirmed that the prepared polyherbal vati was pharmaceutically stable and acceptable. The formulation method was found to be simple, economical, and reproducible for herbal pharmaceutical preparation. The study suggests that the developed vati formulation may be useful as a promising herbal product, although further pharmacological and clinical investigations are required to establish its therapeutic efficacy and safety.

X. CONCLUSION

The present study successfully formulated and evaluated a polyherbal vati containing Ashwagandha,

Shatavari, Manjistha, Licorice, and Gokhru in the form of approximately 500 mg vati. The prepared formulation showed satisfactory physical characteristics, uniformity, hardness, friability, and disintegration properties.

The selected herbal ingredients possess important therapeutic activities such as adaptogenic, antioxidant, anti-inflammatory, rejuvenating, and tonic effects. The combination of these herbs may provide synergistic therapeutic benefits and improve overall health and wellness. The use of gum acacia as a binder helped in obtaining stable and properly shaped vati with good mechanical strength.

Therefore, the study concludes that the developed polyherbal vati formulation is pharmaceutically acceptable and may serve as a promising herbal dosage form. Further pharmacological and clinical studies are recommended to evaluate its therapeutic efficacy, safety, and long-term stability.

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