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A Critical Review of the Role of Lekhana Dravyas in Endometrial Hyperplasia

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Abstract

Background: Endometrial hyperplasia (EH) is a gynecological condition marked by abnormal proliferation of the endometrial lining, most commonly due to unopposed estrogen stimulation. It is clinically significant as it causes abnormal uterine bleeding and carries a risk of progression to endometrial carcinoma if left untreated. Current therapeutic options—such as hormonal therapy with progestins, gonadotropin-releasing hormone analogues, and hysterectomy—are effective but often associated with recurrence, adverse effects, or loss of fertility. This necessitates the exploration of safer and more holistic approaches. Ayurvedic Perspective: Ayurveda describes similar pathological states under Artava Dushti and Yonivyapad, wherein vitiation of Kapha, Meda, and Rakta doshas leads to proliferative abnormalities resembling EH. Lekhana Dravyas—agents endowed with "scraping" or "depleting" properties—are specifically indicated in conditions of excessive tissue growth, obesity, metabolic disturbances, Granthi (cysts), and Arbuda (tumorous swellings). Their properties include Laghu (light), Ruksha (dry), Tikshna (sharp), and Ushna (hot), dominated by Katu, Tikta, and Kashaya rasa, which collectively help dissolve and reduce pathological tissue. Objective: This review critically evaluates the role of Lekhana Dravyas in the management of endometrial hyperplasia, correlating classical Ayurvedic descriptions with modern pharmacological evidence. Methods: Classical Ayurvedic texts, authoritative commentaries, and Nighantus were reviewed to identify Lekhana Dravyas and their therapeutic indications. Relevant modern literature was searched using databases such as PubMed, AYUSH Research Portal, and Google Scholar with including "Lekhana Dravyas," "Ayurveda and endometrial hyperplasia," and "anti-proliferative herbal drugs." Pre-clinical and clinical studies on herbs like Guggulu, Triphala, Daruharidra, and formulations like Kanchanara Guggulu were critically analyzed. Results: Evidence suggests that Lekhana Dravyas possess anti-proliferative, anti-inflammatory, antioxidant, hypolipidemic, and hormonal-modulatory activities, which are relevant in preventing and managing endometrial hyperplasia. While classical descriptions emphasize their role in conditions of tissue

overgrowth, modern studies have validated specific herbs for their cytotoxic and endocrine-modulating effects. However, most data are preclinical, with limited well-structured clinical trials. Conclusion: Lekhana Dravyas provide a rational and promising Ayurvedic approach to the management of endometrial hyperplasia. They can potentially complement or serve as alternatives to conventional therapy, especially in women seeking fertility-preserving and holistic options. Rigorous clinical research, standardization of formulations, and integrative protocols are essential to establish their role in evidence-based gynecology.

Keywords: Lekhana Dravyas, guggulu, Pcod, Endometrial Hyperplasia, Hormonal Imbalance.

Introduction

Endometrial hyperplasia (EH) is a pathological condition characterized by an abnormal proliferation of the endometrial glands, often resulting from prolonged, unopposed estrogen stimulation without the balancing effect of progesterone. Clinically, it manifests as abnormal uterine bleeding, ranging from heavy menstrual flow to intermenstrual spotting, and is considered a significant precursor lesion for endometrial carcinoma. [1] The global prevalence of EH is rising, particularly in women of reproductive age and peri-menopausal groups, largely due to risk factors such as obesity, polycystic ovarian syndrome (PCOS), metabolic syndrome, and chronic anovulation. Conventional management includes progestin therapy, gonadotropin-releasing hormone analogues, and surgical options such as hysterectomy in resistant or recurrent cases. However, these therapies are associated with adverse effects, risk of recurrence, and may compromise fertility, underscoring the need for alternative or complementary therapeutic strategies. [2]

From an Ayurvedic perspective, EH can be understood in terms of Artava Dushti (vitiation of menstrual function), primarily involving Kapha and Meda dosha, along with vitiated Rakta dhatu. The excessive proliferation of tissue parallels conditions described as Granthi (nodular swellings) or early forms of Arbuda (tumorous growth). [3] Ayurvedic principles emphasize correcting the underlying imbalance by reducing pathological tissue overgrowth, restoring Agni (metabolic fire), and purifying the channels (Srotas). This is where the concept of Lekhana Dravyas becomes central. [4]

Lekhana literally translates as "scraping" or "depleting," and Lekhana Dravyas are substances endowed with qualities such as Laghu (light), Ruksha (dry), Tikshna (sharp), and dominated by Katu, Tikta, and Kashaya rasa. [5] These properties enable them to reduce excessive tissue, dissolve pathological accumulations, and restore balance in conditions characterized by hyperplasia, obesity, and glandular swellings. Classical texts prescribe their use in Sthoulya (obesity), Medoroga (lipid disorders), Granthi (cysts/nodules), and Arbuda (tumors), all of which share pathological similarities with endometrial hyperplasia. [6]

Modern pharmacological studies on Lekhana Dravyas like Guggulu (Commiphora mukul), Triphala, Daruharidra (Berberis aristata), and Kanchanara Guggulu have revealed significant anti-inflammatory, hypolipidemic, antioxidant, cytotoxic, and hormonal-modulatory activities. These findings bridge the gap between traditional concepts and modern biomedicine, suggesting their potential as safe and effective therapeutic agents in EH. [7]

This review critically examines the concept of Lekhana Dravyas in Ayurveda, their pharmacological properties, and their potential role in the management of endometrial hyperplasia, while also highlighting gaps in research and future directions for integrative gynecological care.

Aims and Objectives

- To review the classical Ayurvedic references regarding Lekhana Dravyas and their therapeutic indications.
- To critically analyze the pathogenesis of endometrial hyperplasia in light of Ayurveda.
- To identify major Lekhana Dravyas relevant to the management of hyperplastic conditions.
- To correlate the pharmacological properties of these drugs with modern biomedical perspectives.
- To highlight research gaps and propose directions for future studies.

Materials and Methods

This review article is based on:

Ayurvedic Classics

- Primary texts: Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya, and Bhavaprakasha.
- Commentaries and Nighantus for detailed descriptions of Lekhana Dravyas.

Modern Scientific Literature

- PubMed, Scopus, AYUSH Research Portal, Google Scholar searches with keywords:
- "Lekhana Dravyas", "Ayurveda and Endometrial Hyperplasia", "Guggulu anti-proliferative", "Triphala cytotoxicity".
- Selection criteria: Studies focusing on pharmacological actions relevant to hyperplasia, anti-proliferative, anti-inflammatory, or hormonal modulation effects.

Concept of Lekhana in Ayurveda

The term Lekhana is derived from the Sanskrit root "likh" meaning "to scrape." In Ayurveda, Lekhana refers to the therapeutic principle of scraping, reducing, or depleting excessive or morbid tissue, secretions, or metabolic waste products (Ama). It is considered a specialized modality of treatment aimed at correcting pathological accumulations within the body. [8]

Philosophical Basis

Ayurveda views health as a balance of the three Doshas—Vata, Pitta, and Kapha—along with equilibrium of Dhatus (tissues) and Malas (waste). Hyperplastic conditions such as endometrial hyperplasia are understood as predominantly Kapha-Meda disorders, where there is excessive growth, stagnation, and heaviness. Lekhana Dravyas, by virtue of their properties, directly counteract these pathological increases by inducing lightness (Laghu), dryness (Ruksha), and movement (Tikshna). [9]

Properties of Lekhana Dravyas [10,11]

Rasa (Taste): Predominantly Katu (pungent), Tikta (bitter), and Kashaya (astringent). These rasas pacify Kapha and Meda, and check excessive proliferation.

Guna (Qualities): Laghu (light), Ruksha (dry), and Tikshna (sharp). These qualities enable scraping, absorption, and dissolution of excess tissues.

Virya (Potency): Mostly Ushna (hot), which enhances metabolic activity and facilitates the breaking down of stagnation and growth.

Vipaka (Post-digestive effect): Usually Katu, which ensures long-term reduction of Kapha and Meda.

Properties of Lekhana Dravyas and Their Biomedical Correlates [12,13,14]

Parameter	Ayurvedic Concept	Examples of Lekhana Dravyas	Biomedical Correlates / Mechanisms
Rasa (Taste)	*Katu* (pungent), *Tikta* (bitter), *Kashaya* (astringent)	Guggulu, Triphala, Mustaka, Daruharidra	Stimulates digestion & metabolism, reduces Kapha-Meda, has anti-inflammatory & detoxifying effects
Guna (Qualities)	*Laghu* (light), *Ruksha* (dry), *Tikshna* (sharp)	Triphala, Shilajatu, Mustaka	Enhances catabolism, induces tissue depletion, prevents abnormal proliferation
Virya (Potency)	*Ushna* (hot)	Guggulu, Kanchanara, Daruharidra	Improves circulation, increases metabolic rate, regulates hormone activity
Vipaka (Post-digestive effect)	Predominantly *Katu*	Triphala, Mustaka	Long-term reduction of Kapha and Meda, anti-obesity, hypolipidemic activity
Primary Karma (Actions)	*Lekhana* (scraping), *Shoshana* (absorptive), *Vilayana* (dissolving), *Medohara* (fat-reducing), *Rakta-shodhaka* (blood-purifying)	Guggulu, Kanchanara Guggulu, Triphala, Daruharidra, Shilajatu	Anti-proliferative, cytotoxic, antioxidant, hypolipidemic, blood-purifying, apoptosis-inducing
Classical Indications	*Sthoulya* (obesity), *Medoroga* (lipid disorders), *Granthi* (cysts), *Arbuda* (tumors), *Yonivyapad* (gynecological disorders), *Artava Dushti* (menstrual abnormalities)	Guggulu, Triphala, Mustaka, Kanchanara Guggulu	Used in obesity, PCOS, metabolic syndrome, cystic growths, precancerous states
Relevance to Endometrial Hyperplasia	Scraping of excessive endometrial proliferation, reduction of congestion, purification of *Rakta dhatu*	Guggulu, Triphala, Daruharidra, Kanchanara Guggulu	Anti-estrogenic balance, regulation of abnormal bleeding, prevention of malignant transformation

Mechanism of Action (Ayurvedic View) [15]

- Shoshana (Absorption): Absorbing excessive fluidity and congestion from tissues.
- Vilayana (Dissolution): Breaking down pathological accumulations or proliferative growth.

- Medohara (Anti-obesity): Reducing abnormal Meda (lipid tissue), which is often correlated with metabolic and hormonal imbalance.
- Srotoshodhana (Channel-cleansing): Clearing obstruction in reproductive and metabolic pathways, thereby restoring normal physiology.
- Rakta-shodhana (Blood purification): Improving blood quality and circulation, correcting Rakta Dushti involved in gynecological pathologies.

Classical Indications of Lekhana Dravyas [16]

The ancient texts (Charaka Samhita, Sushruta Samhita, and Ashtanga Hridaya) prescribe Lekhana therapy in conditions where pathological overgrowth or accumulation is present:

- Sthoulya (obesity)
- Medoroga (lipid disorders)
- Prameha (metabolic syndrome/diabetes)
- Granthi (cystic swellings)
- Arbuda (tumors)
- Yonivyapad and Artava Dushti (gynecological disorders with proliferative features)

Relevance to Endometrial Hyperplasia

In endometrial hyperplasia, there is excessive proliferation of glandular tissue, congestion, and abnormal bleeding. This mirrors the Kapha-Meda-Rakta imbalance described in Ayurveda. Lekhana Dravyas, by scraping and reducing abnormal growth, hold promise in restoring normal endometrial function. Their actions can be mapped onto modern pharmacological mechanisms such as anti-proliferative activity, induction of apoptosis, antioxidant effects, and metabolic regulation. [17]

Endometrial Hyperplasia: An Ayurvedic View [18]

Pathogenesis: Can be correlated with Artava Dushti (vitiation of menstrual function) involving Kapha and Rakta.

Clinical Parallels: Abnormal uterine bleeding (Asrugdara), excessive endometrial proliferation akin to Granthi/Arbuda formations.

Treatment Principle: Kapha-Meda hara, Rakta-shodhana, and Lekhana chikitsa.

Major Lekhana Dravyas Relevant to Endometrial Hyperplasia [19,20]

1. Guggulu (Commiphora mukul)

Rasa: Katu, Tikta

Karma: Lekhana, Medohara, Shothahara

Modern View: Hypolipidemic, anti-inflammatory, possible anti-proliferative activity.

2. Triphala (Haritaki, Vibhitaki, Amalaki)

Digestive, antioxidant, Rasayana, Lekhana.

Modulates metabolism, enhances Agni, prevents tissue overgrowth.

3. Kanchanara Guggulu

Indicated in Granthi and Arbuda.

Synergistic Lekhana and cytotoxic action; effective in cystic/adenomatous proliferations.

4. Mustaka (Cyperus rotundus)

Katu-Tikta rasa, Ruksha guna.

Regulates abnormal bleeding, reduces congestion, mild anti-estrogenic effect.

5. Daruharidra (Berberis aristata)

Potent Rakta-shodhaka, anti-inflammatory, anti-proliferative due to berberine content.

6. Shilajatu

Yogavahi, Lekhana, Rasayana.

Corrects metabolic imbalance, augments tissue homeostasis.

Pharmacological Correlations [21]

Anti-proliferative and apoptotic effects: Seen in Guggulu, Triphala, Daruharidra.

Hormonal modulation: Certain dravyas regulate estrogen-progesterone balance.

Anti-inflammatory action: Helps in reducing hyperplastic inflammation.

Antioxidant properties: Prevents oxidative stress-mediated tissue overgrowth.

Critical Analysis

While classical texts emphasize the utility of Lekhana Dravyas in proliferative disorders, clinical evidence in endometrial hyperplasia is limited. Most studies are preclinical or anecdotal. Limitations include lack of standardized formulations, small clinical trials, and insufficient mechanistic data. However, the pharmacological evidence suggests promising roles that merit further validation. [22]

Future Perspectives

- Conducting randomized controlled trials with standardized extracts.
- Exploring synergistic formulations like Kanchanara Guggulu in gynecological hyperplasia.
- Integrating Ayurveda with modern diagnostics to monitor regression of hyperplasia.
- Investigating molecular mechanisms (apoptosis, hormone receptor modulation).

Discussion

The concept of Lekhana therapy provides a unique Ayurvedic approach to pathological proliferations such as endometrial hyperplasia. While modern medicine attributes endometrial hyperplasia primarily to unopposed estrogen and altered hormonal signaling, Ayurveda explains it as Kapha–Meda–Rakta dushti, leading to excessive tissue growth. This highlights how classical and modern frameworks, though different in language, converge on the idea of metabolic and proliferative imbalance. [23]

Therapeutic Relevance of Lekhana Dravyas [24,25]

Guggulu and Kanchanara Guggulu show promise in reducing glandular proliferation due to their Lekhana, Medohara, and anti-inflammatory actions.

Triphala and Daruharidra offer antioxidant and cytotoxic effects, suggesting potential roles in limiting hyperplasia and preventing malignant transformation.

Mustaka regulates abnormal uterine bleeding, while Shilajatu corrects systemic metabolic derangements, making them supportive in overall management.

Integration with Modern Evidence [26]

Modern pharmacological studies confirm anti-proliferative, apoptotic, and hormonal-modulatory activities in many of these herbs. For example, berberine (from Daruharidra) and guggulsterones (from Guggulu) exhibit anti-neoplastic and endocrine-modulating effects.

Such findings validate the classical rationale behind prescribing these agents for Granthi (glandular swellings) and proliferative disorders.

Challenges and Gaps

- Most available studies are preclinical or small-scale; robust clinical trials are lacking.
- Standardization of formulations (dose, preparation, purification) remains a challenge.
- Endpoints in Ayurvedic studies often differ from modern clinical parameters, creating difficulty in cross-comparison.

Future Integration

- Ayurveda may offer complementary strategies alongside hormonal therapy, potentially reducing recurrence and side effects.
- Standardized formulations like Kanchanara Guggulu could be tested in controlled settings with histopathological monitoring.
- Integrative protocols may be designed, where modern imaging and diagnostic tools evaluate the efficacy of Lekhana dravyas objectively.

Conclusion

Endometrial hyperplasia represents a significant gynecological condition due to its association with abnormal uterine bleeding, impaired quality of life, and the potential for malignant transformation. While conventional treatment strategies rely heavily on hormonal therapies or surgical interventions, these approaches are not without limitations such as side effects, recurrence, or loss of fertility. Ayurveda, through the principle of Lekhana Chikitsa, provides a holistic and individualized approach. Lekhana Dravyas—by virtue of their Kapha–Meda hara, Rakta-shodhana, and Shoshana properties—offer a rational basis for correcting the pathological proliferation seen in endometrial hyperplasia. Herbs such as Guggulu, Triphala, Daruharidra, and formulations like Kanchanara Guggulu demonstrate both classical justification and modern pharmacological validation in terms of anti-inflammatory, anti-proliferative, antioxidant, and hormonal-modulatory effects. This convergence between ancient wisdom and contemporary science points toward the potential of Lekhana Dravyas as effective, natural, and safer alternatives or adjuncts in the management of endometrial hyperplasia. However, the current evidence remains largely theoretical, anecdotal, or derived from pre-clinical research. To establish their role definitively, well-designed clinical trials, standardization of formulations, and mechanistic studies at the molecular level are essential. In conclusion, Lekhana Dravyas hold promise as integrative agents that can complement modern therapies, reduce recurrence rates, and possibly minimize adverse effects. Their role in preventive gynecology, especially in high-risk women, is an area of immense potential. Bridging Ayurveda and modern science through collaborative research can open new horizons for safe, effective, and holistic management of endometrial hyperplasia.

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