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GARBHA UPAGHATKAR BHAVAS AND PREGNANCY LOSS: A CRITICAL APPRAISAL OF AYURVEDIC AETIOPATHOGENESIS IN THE CONTEXT OF CONTEMPORARY EVIDENCE ON SPONTANEOUS ABORTION AND MISCARRIAGE

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ABSTRACT
Background: Spontaneous abortion and miscarriage continue to represent a substantial obstetric and public health challenge globally, with an estimated 15–20% of clinically recognised pregnancies ending in loss. While contemporary biomedical research has characterised a spectrum of genetic, anatomical, endocrinological, immunological, and environmental aetiologies, classical Ayurvedic texts codify a parallel and remarkably comprehensive set of risk factors under the rubric of Garbha Upaghatkar Bhavas — literally, 'factors capable of inflicting harm upon the developing foetus.' The Charaka Samhita (Sharirasthana 8/21) and allied texts enumerate physical, behavioural, dietary, and psychosomatic determinants of embryo–foetal damage with a specificity that invites systematic biomedical correlation.
Objectives: This study critically appraises the Garbha Upaghatkar Bhavas as documented in canonical Ayurvedic literature, maps each factor to its contemporary biomedical equivalent, identifies substantive convergences and divergences, evaluates the antenatal care (ANC) implications of ancient observational findings on maternal lifestyle and foetal outcome, and proposes a conceptual integrative framework for further clinical investigation.
Methods: A textual-analytical and narrative review design was employed. Classical Sanskrit primary sources — Charaka Samhita, Sushruta Samhita, and Ashtanga Sangraha — were systematically reviewed and translated. A structured search of PubMed, Scopus, and Google Scholar (2014–2024) retrieved contemporary peer-reviewed literature on spontaneous abortion aetiology, maternal nutrition, psychosocial stress in pregnancy, and epigenetics. Thematic coding and comparative analysis were performed.
Results: Eight principal Garbha Upaghatkar Bhavas were identified, each demonstrating robust biomedical analogues: improper posture (mechanical cervical incompetence), suppression of natural urges (autonomic dysregulation, pelvic floor dysfunction), improper exercise (uterine hyper-contractility), thermal-pungent dietary excesses (prostaglandin-mediated uterotonic effects), dietary monotony (micronutrient deficiency), traumatic abdominal injury (placental abruption), vehicular vibration (mechanical embryo dislodgement), and psychoacoustic stress (hypothalamic–pituitary–adrenal axis activation, cortisol-mediated uterine contractility). Ayurvedic classifications of hereditary tendency for recurrent abortion (Garbha Prastravati) parallel contemporary X-linked or epigenetic frameworks of recurrent pregnancy loss.
Conclusion: The Ayurvedic Garbha Upaghatkar Bhavas constitute a clinically relevant, multimodal aetiopathological framework that predates modern understanding of pregnancy loss by over two millennia. Systematic prospective validation studies are warranted to transform these observational insights into evidence-based ANC guidelines within integrative obstetric practice.

KEYWORDS: Garbha Upaghatkar Bhavas; spontaneous abortion; miscarriage aetiology; Ayurvedic obstetrics; Prasuti Tantra; antenatal care; recurrent pregnancy loss; integrative medicine

1. INTRODUCTION

Pregnancy loss, encompassing both spontaneous abortion (pregnancy loss before 20 weeks of gestation) and late miscarriage, is among the most frequent adverse perinatal outcomes encountered in clinical obstetric practice. Epidemiological estimates indicate that 15–20% of all clinically recognised pregnancies terminate in spontaneous loss, with the true incidence — when biochemical pregnancies are included — potentially exceeding 30–40%.[1] The global burden is substantial: the World Health Organization estimates approximately 23 million pregnancy losses per annum worldwide, disproportionately concentrated in low- and middle-income countries where comprehensive antenatal surveillance remains limited.[2]

Contemporary obstetric medicine has progressively delineated the aetiological spectrum of spontaneous abortion. Chromosomal aneuploidy — particularly trisomies, monosomy X, and polyploidy — accounts for approximately 50–60% of first-trimester losses.[3] Beyond genetic causes, anatomical uterine anomalies, antiphospholipid syndrome, thyroid dysfunction, luteal phase insufficiency, infections, and environmental toxin exposures have each been implicated as significant contributory mechanisms.[4,5] Psychosocial stress, nutritional status, physical activity patterns, and maternal behaviour during pregnancy are increasingly recognised as modifiable determinants of pregnancy outcome in epigenetic and immunological frameworks.[6]

Ayurveda — the ancient Indian system of life science documented in texts dating from approximately 600 BCE to 800 CE — addressed pregnancy and foetal development in remarkable detail. The Prasuti Tantra (science of obstetrics) and Kaumarabhritya (paediatrics) chapters of the Charaka Samhita, Sushruta Samhita, and Ashtanga Sangraha contain systematic descriptions of foetal development (Garbha Vridhi), protective antenatal regimens (Masanumasika Paricharya), and, critically, factors capable of injuring or destroying the developing embryo or foetus — collectively termed Garbha Upaghatkar Bhavas.[7]

The Garbha Upaghatkar Bhavas represent a codified aetiological schema of foetal harm that spans physical, dietary, behavioural, and psychological domains. Acharya Charaka's Sharirasthana (8/21) enumerates eight principal categories of such factors, while Sharirasthana 4/18 extends the list further to include teratogenic dietary substances and maternal emotional states.[8] Notably, the Charaka Samhita also documents observational correlations between specific maternal lifestyle patterns during pregnancy and long-term developmental and health outcomes of the offspring — anticipating, in a non-mechanistic idiom, the contemporary science of the Developmental Origins of Health and Disease (DOHaD).[9]

Despite growing scholarly interest in Ayurvedic gynaecology and obstetrics, a systematic critical appraisal of Garbha Upaghatkar Bhavas in the framework of current biomedical evidence on spontaneous abortion aetiology has not been comprehensively undertaken. This gap is clinically significant: India bears a disproportionate share of the global burden of pregnancy loss, and AYUSH practitioners occupy a frontline position in maternal healthcare across rural and semi-urban settings. An evidence-anchored understanding of classical Ayurvedic risk factors for pregnancy loss could enhance ANC counselling, inform integrative obstetric protocols, and generate hypotheses for controlled prospective research.

The present study was therefore designed to: (1) systematically document and analyse the Garbha Upaghatkar Bhavas from canonical Ayurvedic primary sources; (2) correlate each factor with its established or putative biomedical equivalent; (3) critically evaluate the Ayurvedic observational findings on maternal behaviour, diet, and foetal outcome in light of contemporary evidence; (4) examine the concept of hereditary tendency for recurrent abortion (Garbha Prastravati) through the lens of modern genetics and epigenetics; and (5) propose an integrative conceptual framework and research agenda.

2. LITERATURE REVIEW

2.1 Contemporary Understanding of Spontaneous Abortion Aetiology

The aetiological classification of spontaneous abortion has evolved substantially over the past two decades. Chromosomal abnormalities remain the most frequently documented cause of first-trimester loss. Nagaishi et al. (2021) demonstrated in a cytogenetic study of 1,017 spontaneous abortions that chromosomal anomalies were detectable in 54.1% of cases, with trisomies — particularly of chromosomes 16, 22, and 21 — predominating.[10] Advanced maternal age amplifies this risk through accumulating meiotic errors and mitochondrial dysfunction in oocytes.[11]

Anatomical factors — uterine septum, submucosal fibroids, intrauterine adhesions, and cervical incompetence — account for approximately 10–15% of recurrent pregnancy losses.[12] Immunological mechanisms, particularly antiphospholipid syndrome (APS), are implicated in 5–20% of recurrent losses; the pathophysiology involves complement activation, placental thrombosis, and impaired trophoblast invasion.[13] Thyroid autoimmunity, even in euthyroid women, is associated with a 2–3-fold increased risk of miscarriage, likely via NK-cell dysregulation and implantation failure.[14]

Psychosocial stress has received increasing attention as an underappreciated modifiable risk factor. Mukherjee et al. (2019) demonstrated in a prospective cohort of 9,457 women that high perceived stress in the first trimester was associated with a 42% increase in spontaneous abortion risk after adjustment for known confounders, mediated partly through cortisol-induced upregulation of uterine prostaglandin synthesis and NK-cell cytotoxicity.[15] Exposure to environmental toxins — heavy metals, endocrine-disrupting chemicals, and air pollutants — is increasingly documented as a contributor to embryotoxicity and early pregnancy loss.[16]

Nutritional deficiencies are recognised as modifiable aetiological contributors. Folate and vitamin D insufficiency are associated with impaired trophoblast function and neural tube defects; zinc and selenium deficiencies alter immune tolerance at the materno-foetal interface; and oxidative stress secondary to micronutrient inadequacy may promote early placental apoptosis.[17] Physical trauma, occupational vibration exposure, and excessive exercise-induced hormonal disruption (hypoestrogenism, luteal insufficiency) have been mechanistically linked to early pregnancy loss in several observational studies.[18]

2.2 Ayurvedic Scholarship on Garbha Upaghatkar Bhavas

The classical Ayurvedic literature addressing foetal harm is concentrated in the Garbhavakranti and Sharirasthana chapters of the Charaka Samhita, the Sharira Sthana of Sushruta Samhita, and the Sutrasthana of Ashtanga Sangraha. Pandey and Mishra (2016) conducted an early textual review of Garbhopaghatkar Bhavas and noted eight principal categories in Charaka Samhita Sharirasthana 8/21, emphasising the multidimensional aetiological model encompassing physical, nutritional, and psychosocial domains.[19]

Singh and Tewari (2018) examined the Masanumasika Paricharya (month-by-month antenatal regimen) of Ayurveda and proposed that the dietary, lifestyle, and behavioural prescriptions enumerated therein represent an evidence-congruent

risk-reduction framework, noting particular convergence with contemporary evidence on maternal nutrition and psychosocial wellbeing.[20] However, rigorous mechanistic analyses and comparative biomedical correlations have remained limited.

The concept of Garbha Prastravati — hereditary tendency for habitual abortion — documented by Acharya Charaka in Sutrasthana 28/18 and classified under Matruja Sahaj Vikarani (maternal/X-linked hereditary disorders) by Vagbhata in Ashtanga Sangraha Sutrasthana 22/3, represents a particularly prescient formulation. Modern genetics recognises that women carrying balanced chromosomal translocations (particularly X-linked mutations), thrombophilias (Factor V Leiden, Protein C/S deficiencies), and certain HLA haplotype combinations have inheritable predispositions to recurrent pregnancy loss — a category approximately analogous to the Ayurvedic Matruja Sahaj Vikarani framework.[21]

2.3 Research Gaps

Despite the conceptual richness of the classical corpus, several gaps persist: (1) no prospective controlled study has validated the specific Garbha Upaghatkar Bhavas enumerated in Charaka Samhita using contemporary obstetric endpoints; (2) the maternal dietary observations (Rasaprabhavaj Garbha Vikaras) and their posited offspring health effects have not been examined in epigenetic or DOHaD frameworks; (3) the hereditary classification of Garbha Prastravati has not been systematically mapped to modern chromosomal or thrombophilic recurrent pregnancy loss subtypes; and (4) no integrative ANC protocol incorporating validated Ayurvedic risk factors alongside standard obstetric screening has been evaluated in a clinical trial. The present study addresses the first three of these gaps through systematic textual analysis and biomedical correlation.

3. MATERIALS AND METHODS

3.1 Study Design

A mixed-method study design was employed, integrating (a) systematic primary textual analysis of Ayurvedic classical sources and (b) narrative systematic review of contemporary biomedical literature, followed by comparative thematic analysis and conceptual framework development.

3.2 Primary Textual Sources

Three canonical Ayurvedic texts were selected as primary sources based on their established clinical authority and their specific coverage of foetal development and pregnancy pathology:

(i) Charaka Samhita of Acharya Charaka and Agnivesha, Sharirasthana 4/18 and 8/21 — translated and critically annotated edition by Acharya Vidyadhar Shukla and Ravidutta Tripathi (Chaukhamba Sanskrit Pratishthan, New Delhi, 2019); (ii) Sushruta Samhita of Acharya Sushruta, Sharirasthana — edited by Vaidya Yadavji Trikamji Acharya (Chaukhamba Sanskrit Sansthan, Varanasi, 2014); and (iii) Ashtanga Sangraha of Acharya Vagbhata, Sutrasthana 22/3 — translated by Vd. Lalchand Shastri (Shree Baidynath Ayurved Bhavan, Nagpur, 1981).

All textual passages relevant to Garbha Upaghatkar Bhavas, Garbha Prastravati, Matruja and Pitruja Sahaj Vikarani, Rasaprabhavaj Garbha Vikaras, and maternal behavioural correlates of foetal outcome were extracted. Original Sanskrit shlokas were reviewed for semantic accuracy; Hindi and English translations were cross-validated using multiple commentaries.

3.3 Secondary Literature Search Strategy

Electronic databases — PubMed/MEDLINE, Scopus, and Google Scholar — were searched for peer-reviewed publications in English, published between January 2014 and December 2024. MeSH terms and free-text keywords used included: 'spontaneous abortion', 'miscarriage', 'recurrent pregnancy loss', 'aetiology', 'risk factors', 'antenatal stress', 'maternal nutrition pregnancy loss', 'uterine contractility', 'cervical incompetence', 'foetal epigenetics', 'developmental origins of health and disease', 'psychosocial stress miscarriage', 'occupational vibration pregnancy', and 'Ayurveda pregnancy'. Additional searches targeted: 'chromosomal aneuploidy abortion', 'antiphospholipid syndrome miscarriage', 'thyroid autoimmunity miscarriage', 'prostaglandin uterine contractility', and 'DOHaD epigenetics'.

3.4 Inclusion and Exclusion Criteria

Inclusion criteria for biomedical literature: peer-reviewed original research articles, systematic reviews, and meta-analyses; studies reporting on aetiology, risk factors, pathophysiology, or prevention of spontaneous abortion or miscarriage; human studies; publication in indexed journals between 2014 and 2024. Exclusion criteria: case reports of fewer than five subjects; conference abstracts without full-text publication; non-peer-reviewed commentary; studies restricted to induced abortion without relevance to spontaneous pregnancy loss.

3.5 Data Extraction and Thematic Analysis

Data from both classical textual sources and biomedical literature were extracted into a structured matrix. Garbha Upaghatkar Bhavas were coded as independent thematic units. For each unit, biomedical literature was reviewed to identify mechanistic, epidemiological, or clinical evidence supporting, qualifying, or contradicting the Ayurvedic proposition. Themes were iteratively refined through discussion between the two authors until consensus was reached.

3.6 Ethical Considerations

This study involved analysis of classical textual material and published secondary literature exclusively. No primary human data were collected. Accordingly, institutional ethics board approval was not required. All classical Sanskrit quotations are reproduced with scholarly attribution and for non-commercial academic purposes.

4. RESULTS

4.1 The Eight Garbha Upaghatkar Bhavas: Textual Analysis and Biomedical Correlates

Systematic review of Charaka Samhita Sharirasthana 8/21 identified eight principal Garbha Upaghatkar Bhavas. Each is presented below with its classical description, interpretive analysis, and contemporary biomedical correlate.

4.1.1 Improper Sitting Posture (Asukhena Asanena)

Acharya Charaka specifies that a pregnant woman who habitually sits in a squatting position, on an uneven surface, or on an excessively hard seat risks foetal harm. Contemporary biomechanical research provides a plausible mechanistic substrate: sustained squatting during pregnancy increases intra-abdominal pressure, may alter the position of the presenting foetal part, and, in the setting of an anatomically shortened cervix, can exacerbate cervical effacement and dilatation.[22] A prospective cohort study by Lawson and Bhattacherjee (2019) demonstrated that occupational postures involving prolonged squatting and forward bending were associated with a statistically significant increase in risk of second-trimester loss (adjusted OR 1.87 - 95% CI 1.23–2.84).[23] The Ayurvedic recommendation to sit on a comfortable, level, padded surface is thus mechanistically consonant with contemporary advice to avoid sustained pressure on the gravid uterus.

4.1.2 Suppression of Natural Urges (Vegadharana)

The Ayurvedic injunction against forceful suppression of the natural urges of micturition, defaecation, and flatus during pregnancy is attributed to potential uterine irritation and untimely contractions. Modern understanding of pelvic floor physiology supports this reasoning: habitual suppression of micturition leads to overdistension of the urinary bladder, which, through viscerosomatic reflex arcs, can trigger myometrial contractility; urinary retention also predisposes to ascending urinary tract infection — a well-established risk factor for preterm labour and second-trimester abortion.[24] Constipation with Valsalva straining elevates intra-uterine pressure transiently and may increase the risk of membrane rupture in women with pre-existing cervical weakness. A study by Genc et al. (2020) confirmed that recurrent UTIs during the first trimester were independently associated with a 6-fold increase in spontaneous abortion risk.[25]

4.1.3 Improper or Excessive Exercise (Ativyayama)

Acharya Charaka cautions against hard, improper, or excessive physical exertion during pregnancy. Contemporary obstetric exercise physiology presents a nuanced picture: moderate aerobic exercise in pregnancy is associated with improved maternal and foetal outcomes, but high-intensity or exhaustive exercise in early pregnancy can transiently redirect uteroplacental blood flow, elevate core body temperature (with teratogenic potential above 39°C in the first trimester), and increase circulating cortisol and catecholamines — all of which may adversely influence embryo–maternal immune tolerance and myometrial quiescence.[26] A systematic review by Harber et al. (2021) found that strenuous recreational or occupational exercise (>3 MET-hours/day) in early gestation was associated with a modest but significant increase in first-trimester loss risk (pooled OR 1.[31,] 95% CI 1.[11]–1.[54]) among women with pre-existing uteroplacental insufficiency.[27]

4.1.4 Consumption of Hot and Pungent Substances (Tikshna Ushna Atimatra Sevaniya)

The Ayurvedic text warns against excessive consumption of hot (ushna) and pungent/acrid (tikshna) dietary substances during pregnancy. A well-established mechanism exists through the prostaglandin pathway: capsaicin and related compounds in pungent foods, as well as thermally processed foods, stimulate TRPV1 receptor activation and cyclooxygenase-2 (COX-2) upregulation, resulting in increased prostaglandin E2 and F2α synthesis in the uterus — known uterotonic agents capable of initiating myometrial contractions.[28] Epidemiological studies in South and Southeast Asian populations have documented an association between high intake of chilli and spice-rich diets during the first trimester with increased reporting of cramping and a trend toward higher early pregnancy loss rates, though adequately powered prospective data remain scarce.[29] Thermally processed foods high in advanced glycation end-products (AGEs) are independently linked to impaired endometrial receptivity and reduced implantation success.[30]

4.1.5 Monotonous Rasa-Dominant Diet (Pramitashana / Eka-Rasa Sevana)

The classical text specifies that a pregnant woman consuming a diet dominated by one or two of the six Ayurvedic rasas (tastes) is at risk of foetal harm. This maps directly onto the contemporary understanding of dietary monotony and micronutrient deficiency during pregnancy. A diet predominantly sweet (madhura) may predispose to hyperglycaemia, gestational diabetes, and associated foetal macrosomia or growth restriction; a salt-predominant diet may worsen pregnancy-induced hypertension; a diet deficient in bitter (tikta) and astringent (kashaya) vegetables lacks the flavonoid and polyphenolic micronutrients that regulate placental oxidative homeostasis.[31] WHO nutritional guidelines for antenatal care explicitly emphasise dietary diversity across all food groups and micronutrient supplementation as evidence-based strategies to reduce adverse pregnancy outcomes.[32]

4.1.6 Traumatic Abdominal Injury and Compression (Abhighataj)

The Charaka Samhita Sharirasthana 8/21 references direct abdominal trauma, excessive forward bending, and looking downward into deep wells or waterfalls as potential causes of foetal damage. Physical abdominal trauma is a well-documented cause of placental abruption, premature rupture of membranes, and foetal distress in all trimesters. A prospective study by El-Kady et al. (2017) documented that blunt abdominal trauma was associated with placental abruption in 2.3–4.6% of cases, with an inverse relationship between gestational age and foetal reserve at the time of

injury.[33] The specific reference to forward bending and cervical craning relates to sudden shifts in intra-abdominal pressure that may compromise uteroplacental blood flow.

4.1.7 Travel in Vibratory or Jerky Vehicles (Atikampit Yana)

The classical text warns against pregnant women travelling in vehicles that shake excessively and apply pressure to the abdomen. This precaution is supported by occupational health literature on whole-body vibration (WBV) exposure in pregnancy. A systematic review and meta-analysis by Palmer et al. (2020) examining 26 studies on occupational WBV exposure found a pooled OR of 1.[38] (95% CI 1.[17]–1.[63]) for spontaneous abortion among women exposed to WBV frequencies in the 0.[5]–80 Hz range during the first trimester, with the strongest associations observed for high-magnitude vertical vibration.[34] Proposed mechanisms include mechanical disruption of trophoblast anchoring villi, impaired uteroplacental perfusion through vascular compression, and stress-mediated neuroendocrine activation.

4.1.8 Auditory Stress and Harsh Words (Apriya Shravana)

Perhaps the most philosophically intriguing among the Garbha Upaghatkar Bhavas is the injunction against exposing the pregnant woman to harsh, unpleasant, or distressing auditory stimuli. The classical reasoning holds that such stimuli disturb the mental state of the mother, potentially triggering untimely uterine contractions and foetal detachment. Contemporary neuroendocrine science offers a robust mechanistic framework: psychoacoustic stressors activate the hypothalamic–pituitary–adrenal (HPA) axis, elevating maternal serum cortisol; cortisol crosses the placenta, elevates foetal cortisol exposure, and stimulates prostaglandin synthesis in the decidua and amnion via CRH-PGHS-2 cascade activation.[35] A meta-analysis by Blencowe et al. (2022) established that severe maternal psychosocial stress in the first trimester was associated with a significant increase in spontaneous abortion risk (pooled RR 1.[42,] 95% CI 1.[18]–1.[71]), mediated substantially through cortisol and catecholamine elevation.[36]

4.2 Maternal Behaviour, Lifestyle, and Foetal Outcomes: Ayurvedic Observational Taxonomy

Charaka Samhita Sharirasthana 8/21 records a systematic observational taxonomy correlating specific maternal behaviours during pregnancy with long-term developmental and constitutional outcomes in the offspring. These include correlates of nocturnal exposure, quarrelsome behaviour, persistent grief, sexual activity, theft, anger, and excessive sleep with specific neonatal and childhood phenotypes. While these ancient observations cannot be accepted uncritically as causal claims, they are remarkable precursors to the contemporary DOHaD paradigm, which holds that the intrauterine environment — shaped by maternal hormonal, nutritional, and psychosocial states — programmes foetal epigenetic patterns with lasting consequences for offspring health.[9]

Contemporary research provides mechanistic support for several of these correlations. Persistent maternal depression and anxiety during pregnancy are associated with elevated glucocorticoid exposure in utero, predictive of altered HPA axis programming in offspring with increased susceptibility to anxiety disorders, cognitive deficits, and metabolic dysregulation.[37] Maternal sleep deprivation is associated with increased inflammatory cytokines and impaired foetal neurodevelopmental outcomes.[38] Maternal dietary patterns during pregnancy demonstrably influence offspring metabolic phenotype through epigenetic mechanisms including DNA methylation at imprinted gene loci and histone modification — mechanisms broadly consonant with the Ayurvedic concept of Rasaprabhavaj Garbha Vikaras (dietary-rasa-mediated foetal disorders).[39]

4.3 Hereditary Tendency for Abortion: Garbha Prastravati in Genetic Perspective

The Ayurvedic classification of Garbha Prastravati (hereditary tendency for habitual abortion) under Matruja Sahaj Vikarani (maternal-lineage hereditary disorders) and Pitruja Sahaj Vikarani (paternal-lineage hereditary disorders) corresponds conceptually to the well-established genetic, thrombophilic, and immunogenetic bases of recurrent pregnancy loss (RPL). RPL — defined as three or more consecutive pregnancy losses before 20 weeks — affects approximately 1–2% of women of reproductive age.[40] Known heritable contributors include: balanced reciprocal translocations (maternal in 60% of chromosomal cases); mutations in Factor V Leiden, Prothrombin G20210A, and MTHFR genes; antiphospholipid antibodies in familial APS; and HLA-G polymorphisms affecting NK-cell mediated implantation tolerance.[21] The Ayurvedic distinction between Matruja (maternal/ovum-mediated) and Pitruja (paternal/sperm-mediated) hereditary predispositions closely parallels the contemporary observation that both maternal and paternal genomic contributions influence recurrent pregnancy loss risk, the latter through sperm DNA fragmentation and Y-chromosomal microdeletions.[41]

5. DISCUSSION

The present critical appraisal establishes that the Garbha Upaghatkar Bhavas documented in classical Ayurvedic texts constitute a clinically coherent, multimodal aetiological framework for pregnancy loss that demonstrates substantial convergence with contemporary biomedical evidence. This convergence is not merely semantic: in each of the eight principal categories examined, plausible mechanistic pathways can be identified that link the classical Ayurvedic risk factor to specific obstetric sequelae through prostaglandin biosynthesis, neuroendocrine HPA-axis activation, mechanical uteroplacental disruption, nutritional deficiency, or immunological dysregulation.

The Ayurvedic emphasis on psychoacoustic and psychosocial stress (Apriya Shravana) as a cause of foetal harm is particularly noteworthy in light of its departure from the purely somatic focus that dominated much of pre-modern Western medical thought. The Charaka Samhita's repeated insistence on mental equanimity (Satva-prashama) as an essential component of healthy pregnancy anticipates by over two millennia the modern psychoneuroimmunological understanding of materno-foetal communication via the HPA axis, placental CRH, and immune modulators. This is consistent with the

growing clinical recognition that psychological interventions — mindfulness-based stress reduction, cognitive behavioural therapy, and social support programmes — may reduce the risk of spontaneous abortion in high-risk populations, though large randomised controlled trials are still awaited.[42]

The dietary correlations described under the Rasaprabhavaj Garbha Vikaras require careful interpretive calibration. The Ayurvedic observations — such as excessive sweet food consumption leading to offspring with obesity or diabetes, or excessive salty food leading to premature greying — cannot be accepted as direct causal claims in their classical formulation. However, they are consistent with the epigenetic DOHaD hypothesis, which holds that the quality and composition of maternal diet during sensitive developmental windows modulates DNA methylation patterns at metabolically relevant imprinted loci (including IGF2, H19, PHLDA2), with measurable effects on offspring adiposity, insulin sensitivity, and stress response programming.[39] The specificity of the classical observations — linking particular flavour-dominant diets to discrete offspring conditions — may reflect ancient empirical observation of population-level dietary habits and disease clusters, deserving systematic investigation using modern nutritional epidemiology and epigenomic methods.

The Ayurvedic concept of Garbha Prastravati merits particular attention in the emerging field of reproductive genetics. The classification of this condition as Matruja Sahaj Vikarani — inheritable through the maternal line — is consistent with the observation that X-linked thrombophilias, certain HLA haplotypes, and mitochondrial mutations (transmitted exclusively maternally) constitute an important subset of heritable RPL. The parallel Pitruja category is consistent with paternal genomic contributions to RPL through sperm DNA fragmentation and chromosomal structural variants. A prospective genetic registry study in Ayurvedic institutional settings, correlating family history of recurrent abortion with specific genetic polymorphism panels, could provide valuable epidemiological data to validate or refine this ancient classification.

A critical observation concerns the areas of divergence or incompleteness in the Ayurvedic framework. The role of chromosomal aneuploidy — the single largest aetiology of spontaneous abortion in modern obstetrics — has no direct equivalent in the classical Garbha Upaghatkar Bhava taxonomy, which is principally oriented toward modifiable maternal factors rather than intrinsic embryonic determinants. Similarly, the immunological complexity of antiphospholipid syndrome, the contribution of thyroid autoimmunity, and the pathophysiology of luteal phase insufficiency are not captured in classical aetiological frameworks, reflecting the absence of cellular and molecular biology tools in ancient medical science. This underscores that the Ayurvedic framework is best understood as a complementary rather than a competing aetiological system — one that enriches the modifiable risk factor landscape without superseding the genetic and immunological dimensions central to contemporary RPL management.

From a practical ANC standpoint, several of the Garbha Upaghatkar Bhavas translate directly into actionable clinical guidance that AYUSH practitioners can integrate into antenatal counselling: avoidance of occupational whole-body vibration and hard physical labour, maintenance of dietary diversity, correction of nutritional deficiencies, psychosocial stress reduction, avoidance of pungent and spice-heavy diets in the first trimester, safe posture practices, and prompt attention to urinary tract symptoms. These recommendations are largely congruent with standard WHO antenatal care guidelines and ACOG practice bulletins, providing a basis for harmonised integrative ANC protocols.

6. CONCLUSION

The Garbha Upaghatkar Bhavas of classical Ayurvedic medicine represent a sophisticated, multidimensional aetiological taxonomy of factors capable of harming the developing embryo and foetus. This study has demonstrated that each of the eight principal categories enumerated in the Charaka Samhita possesses a substantive biomedical correlate, spanning prostaglandin-mediated uterotonic pathways, neuroendocrine stress responses, mechanical uteroplacental disruption, nutritional deficiency, and oscillatory vibration-induced foetal dislodgement. The Ayurvedic observational taxonomy of maternal behaviour and dietary patterns in relation to foetal outcome anticipates the core tenets of the Developmental Origins of Health and Disease hypothesis. The classification of Garbha Prastravati as a maternally or paternally inherited condition converges meaningfully with contemporary genetic and thrombophilic frameworks of recurrent pregnancy loss. Integration of validated Garbha Upaghatkar Bhava risk factor assessment into routine ANC protocols could enhance preventive counselling and contribute to the reduction of India's substantial burden of pregnancy loss.

DECLARATIONS

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Ethical issue – There is no ethical issue involved as it is scientific review

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