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Review Article

The Clinical Relevance of *Artava*: From Upadhatu to Modern Proteomic Diagnostic Biofluid: A Narrative Review

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Abstract

Background: *Artava,* as described in *Ayurveda* is a core determinant of women's reproductive health, encompassing menstrual function, fertility, and diagnostic indicators of gynaecological diseases. From an Ayurvedic ontological perspective, *Artava* is conceptualized as an *Upadhatu* originating from *Rasa Dhatu,* as described by *Acharya Charaka* and *Vagbhata,* whereas Acharya Sushruta emphasizes its manifestation as Rakta that is localized in the Garbhashaya and periodically secretes during menstruation. Classical *Ayurvedic* texts describe *Artava,* when endowed with normal colour, consistency, odour, and periodicity, as *Suddha Artava*, signifying physiological menstruation and reproductive competence in women. In Ayurvedic gynaecology, the assessment of *Artava* is based on the analysis of qualitative attributes such as colour, texture, odour, volume, and associated clinical features. Conversely, contemporary biomedical science interprets menstruation as a physiologically regulated process driven by cyclical hormonal interactions within the hypothalamic–pituitary–ovarian axis and changes in the endometrium. **Objective:** This narrative review integrates classical *Ayurveda* concepts with modern scientific interpretations of menstrual physiology to elucidate the ontological basis, functional significance, and diagnostic benefits of *Artava*. **Methods:** This narrative review is based on a comprehensive analysis of classical *Ayurveda* texts, including *Charaka Samhita*, *Sushruta Samhita* and *Ashtanga Hridaya*, and their authoritative commentaries. **Results:** This review emphasizes the convergences between traditional sensory-based assessment and current biological understanding of menstruation, critically examines the clinical relevance of *Artavadushti*, and outlines future research possibilities, including molecular and proteomic evaluation of menstrual blood. Existing reviews often remain descriptive, fragmented, or confined to either classical exposition or biomedical correlation, without offering a cohesive integrative framework. **Conclusion:** This narrative review aims to critically analyze classical and contemporary literature to present an integrative understanding of *Artava*, including the conceptual and clinical significance of *Artava Pariksha* and *Artavadushti*, as well as the potential for translational research in this area.

Keywords: *Artava, Rasa Dhatu, Upadhatu*, Menstrual blood, *Artava Pariksha*

Introduction

Menstruation is a vital physiological process that reflects the functional integrity of the female reproductive system and overall systemic health. *Ayurveda* conceptualizes women's health as the outcome of equilibrium among *Dosha*, *Dhatu*, *Mala*, *Agni*, and *Manas.* Classical *Ayurveda* texts such as *Charaka Samhita*, *Sushruta Samhita*, and *Ashtanga Hridaya* describe *Artava* as not merely menstrual blood but as a dynamic biological entity intricately linked with *Dhatu* nourishment and reproductive potential. In contemporary medicine, menstruation is explained by complex endocrine interactions involving the hypothalamic–pituitary–ovarian (HPO) axis and cyclical changes in the endometrium. While modern gynaecology relies predominantly on hormonal assays, imaging, and histopathology, *Ayurveda* emphasizes direct sensory observation (Panchendriya Pariksha). This includes the analysis of *Varṇa* (colour) and *Picchilata* (consistency) through *Chakṣu Indriya* (visual perception), as well as *Gandha (odour)* through *Ghraṇa Indriya* (olfactory perception) of menstrual blood to infer physiological and pathological states. Recent *Ayurveda* literature has attempted to reinterpret the concept of *Artava* in light of modern physiology understanding, drawing upon interdisciplinary sources indexed in databases such as PubMed, Scopus, and the AYUSH Research Portal. Areas of convergence have been identified, particularly in the recognition of the menstrual cycle as a reflection of systemic homeostasis and reproductive competence, while points of divergence remain in the epistemological approaches, methodological frameworks, and diagnostic priorities of the two systems. Existing reviews often remain descriptive, fragmented, or confined to either

classical exposition or biomedical correlation, without offering a cohesive integrative framework. However, a comprehensive narrative synthesis integrating the *Dhatu*-based origin of *Artava*, its physiological relevance, and diagnostic utility remains limited. In this context, this narrative review aims to critically analyze classical and contemporary literature to present an integrative understanding of *Artava*, including the conceptual and clinical significance of *Artava Pariksha* and *Artavadushti*, as well as the potential for translational research. By synthesizing traditional qualitative assessment with emerging molecular, biochemical, and proteomic insights into menstrual blood, this review aims to contribute to the advancement of evidence-informed, integrative gynaecological research and practice. Recent biomedical research increasingly recognizes menstruation as a valuable window into systemic and reproductive health rather than a mere cyclical physiological event. Contemporary studies have demonstrated that menstrual blood contains endometrial cells, immune mediators, proteins, cytokines, and molecular signatures that reflect uterine homeostasis and pathology, thereby offering diagnostic insights into gynaecological and systemic disorders.

This emerging scientific perspective provides fertile ground for re-examining the Ayurvedic concept of *Artava*, in which qualitative aspects of menstruation have traditionally been considered indicators of internal physiological equilibrium. Despite detailed classical descriptions of *Shuddha Artava*, contemporary Ayurvedic research has highlighted the need for standardized assessment tools to objectively evaluate physiological characteristics of menstruation. Recent efforts toward the development and standardization of *Suddha Artava* assessment scales reflect an important step toward translating classical qualitative descriptors into reproducible research instruments, particularly when examined in relation to individual constitutional factors, such as *Prakṛti*.

Materials and Methods

This narrative review is based on a comprehensive analysis of classical *Ayurveda* texts, including *Charaka Samhita*, *Sushruta Samhita* and *Ashtanga Hridaya*, and their authoritative commentaries. Literature published between 2012 and 2025 was searched using keywords including "Artava," "menstrual blood proteomics," "Ayurveda menstruation," and "reproductive immunology" in databases such as PubMed, Scopus, and the AYUSH Research Portal. Additionally, modern gynaecological textbooks and peer-reviewed journals were reviewed.A narrative review design was selected to address the conceptual and epistemological complexity of *Artava* within *Ayurveda* gynecology and its correspondence with contemporary biomedical interpretations of menstruation. Classical Ayurveda descriptions of *Artava* are distributed across foundational texts and commentaries, exhibiting variations in ontological emphasis and diagnostic orientation that cannot be meaningfully synthesized through systematic or quantitative review methods. Similarly, contemporary biomedical literature on menstruation encompasses heterogeneous domains, including endocrinology, immunology, and emerging proteomic analyses of menstrual blood, with diverse methods and outcome measures. Therefore, a narrative review allows for critical contextualization and thematic synthesis across these heterogeneous sources. This approach is particularly suited for examining the diagnostic relevance of qualitative menstrual assessment, such as *Artava Pariksha*, and for developing an integrative conceptual framework that bridges classical Ayurveda theory with modern scientific evidence.

Concept of *Artava* and *Artava Chakra* in *Ayurveda*

Etymology **ऋतौ भवम् आर्तवम्**

Ritu - Means a particular or specific time. *Bhavam* – Implies its occurrence

It happens periodically. Therefore, it can be correlated with the menstruation, which occurs cyclically.

The term *Artava* is derived from the root Ṛitu, which denotes periodicity and cyclical rhythm.[1] In Ayurvedic literature, *Artava* encompasses not only menstruation but also ovulatory processes and overall reproductive vitality, with its specific meaning determined by the context. This multidimensional interpretation reflects Ayurveda's holistic epistemology, wherein structure, function, and cyclicity are interdependent aspects of physiological regulation. Classical descriptions of *Suddha Artava* provide the conceptual basis for contemporary efforts toward scale development, in which qualitative parameters such as colour, consistency, odour, quantity, and periodicity are systematically operationalized into measurable domains. Furthermore, correlating these parameters with *Prakṛti* is consistent with the Dhatu-based ontological framework of Ayurveda, as it acknowledges inherent interindividual physiological variability rather than imposing uniform normative standards.

Artava as *Upadhatu* of *Rasa Dhatu*

*A*yurvedic physiology describes seven *dhatu*s formed sequentially from *Ahara Rasa.* During the nourishment of *Rasa Dhatu*, *Upadhatu* are formed, among which *Artava* is specifically attributed to women [2]. *Acharya Vagbhata* describes *Artava* as the *Rakta* fraction that accumulates in the *Garbhashaya* and is periodically expelled. This concept emphasizes that menstrual health depends on proper digestion, metabolism, and *Rasa Dhatu* quality. *Artava* is the basic building block of *Artavavaha* Srotas, while *Garbhashaya* and *Artavavahi Dhamanis* make up its *Moola*. The formation of *Artava* reflects the systemic nutritional and metabolic status rather than isolated uterine function. This perspective provides a broader understanding of menstrual disorders as manifestations of systemic *dhatu* imbalance. The Ayurvedic concept of Artava as a dhatu-derived entity resonates with modern observations that menstrual blood originates from the functional layer of the endometrium, a highly regenerative tissue influenced by systemic nutritional, hormonal, and immunological factors. Proteomic and

cellular analyses demonstrated that menstrual blood reflects localized endometrial processes rather than peripheral circulation alone, supporting the Ayurveda view of *Artava* as a tissue-specific manifestation of systemic physiology.

Characteristics of *Shuddha Artava*[3]

Classical Ayurvedic texts describe *Shuddha Artava* using qualitative parameters:

- ***Varna* (Colour):** *Gunjaphala-sannibham, Padma, Aalakta-sannibham, Indergopa-sankasham, Shasakasruk-partimam*[4]*, Ishatkrushna*
- ***Gandha* (Odour):** *Nirgandha* (absence of foul smell)
- ***Sparsha* (Consistency):** Nischpichaa
- ***Nirarti:*** Absence of pain

These features denote physiological menstrual function and indicate a state of *Dosha–Dhatu equilibrium.* Ayurveda diagnosis prioritizes the recognition of minor deviations from these parameters, highlighting an approach that emphasizes the identification of functional disturbances before the development of overt structural diseases.

Artavadushti and Diagnostic Significance

Classical Ayurveda literature describes *Artavadushti* as pathological alterations of *Artava* arising due to the vitiation of Doshas. *Acharya Charaka* emphasizes the role of Dosha imbalance affecting *Rasa* and *Rakta Dhatu*, leading to qualitative and quantitative abnormalities of *Artava* that manifest as menstrual disorders and impaired fertility. Although *Acharya Charaka* does not enumerate *Artavadushti* as a separate categorical disease, he highlights menstrual irregularities as reflections of systemic *dhatu* dysfunction and *dosha* vitiation, particularly involving *Vata* and *Pitta*. Contemporary studies have demonstrated that menstrual blood can serve as a non-invasive diagnostic specimen for conditions such as endometriosis, cervical cancer, genital tuberculosis, hormonal disorders, and unexplained infertility[5]. Alterations in cytokine profiles, proteomic patterns, and extracellular vesicle [6] observed in these conditions may exhibit potential parallel with the qualitative deviations described in classical *Artavadushti,* suggesting translational and diagnostic relevance[7]. Acharya Sushruta's classification of eight *Artavadushti* varieties reflects an advanced attempt to correlate sensory menstrual alterations with underlying *Dosha*-specific pathology[8]. These include *Vataja*, *Pittaja*, *Kaphaja*, *Raktaja (Kunapagandhi)*, *Vata-Pittaja (Kshina)*, *Pitta-Kaphaja (Putipuya)*, *Vata-Kaphaja (Granthibhuta)*, and *Tridoshaja (Mutrapurishagandhi)* Artavadushti. *Acharya Sushruta* further correlates these varieties with characteristic changes in colour, consistency, odour, pain, and associated systemic features, thereby establishing a detailed diagnostic framework.

Acharya Vagbhata, in *Ashtanga Hridaya*, synthesizes the views of *Acharya Charaka* and *Acharya Sushruta* and elaborates on *Artavadushti* in relation to *Yonivyapad* and *Bandhyatva*. *Acharya Vagbhata* emphasizes the functional and clinical relevance of altered *Artava*, describing its assessment through sensory perception and clinical presentation, and reinforcing the diagnostic utility of *Artava Pariksha*.

The analysis of *Artavadushti* through *Panchendriya Pariksha*[9]*—Chakshu*, *Ghrana*, *Sparsha* etc. and patient-experienced sensory assessment—forms the cornerstone of *Artava Pariksha*. Sensory attributes act as biological proxies for molecular and cellular alterations[10]. Contemporary Ayurvedic interpretations suggest that specific *Artavadushti* patterns may correspond to gynaecological conditions such as inflammatory disorders, hormonal imbalance, infective pathologies, and neoplastic changes. While these correlations warrant further empirical validation, they highlight the potential of Acharya's classifications to inform future evidence-driven diagnostic models in the gynaecological field.

Modern Perspective on Menstrual Blood and Menstruation

Modern biomedical science conceptualizes menstruation as a hormonally regulated physiological process characterized by cyclical structural and functional changes in the endometrium. This process is governed by the hypothalamic–pituitary–ovarian (HPO) axis, wherein the pulsatile secretion of gonadotropin-releasing hormone (GnRH) from the hypothalamus regulates the release of follicle-stimulating hormone (FSH) and luteinizing hormone (LH) from the pituitary gland. These gonadotropins modulate ovarian secretion of estrogen and progesterone, which orchestrate the sequential menstrual, follicular, ovulatory, and luteal phases. The withdrawal of progesterone and release of prostaglandins at the end of the luteal phase lead to vasoconstriction, tissue breakdown, and shedding of the functional layer of the endometrium, resulting in menstrual bleeding.

Menstrual blood is a complex biological fluid composed of blood, endometrial tissue, cervical mucus, immune cells, inflammatory mediators, enzymes, and a wide range of biochemical and molecular constituents[11]. These components reflect the dynamic interactions between endocrine regulation, vascular changes, immune modulation, and tissue remodelling within the uterus[12]. Clinically, variations in menstrual flow, colour, and consistency are recognized and often documented; however, in contemporary medical practice, such variations are frequently regarded as subjective unless accompanied by measurable abnormalities such as hormonal imbalance, structural pathology, infection, or systemic disease. Consequently, qualitative menstrual characteristics are often underutilized as diagnostic indicators despite their potential to provide insights into the underlying physiological and pathological processes. Beyond hormonal regulation by the hypothalamic–pituitary–ovarian axis, menstruation involves regulated immune activation, extracellular matrix remodelling, angiogenesis, and apoptotic pathways within the endometrium. Therefore, menstrual blood represents a biologically active fluid containing cytokines such as IL-6, IL-1β, CXCL8, growth factors, and matrix

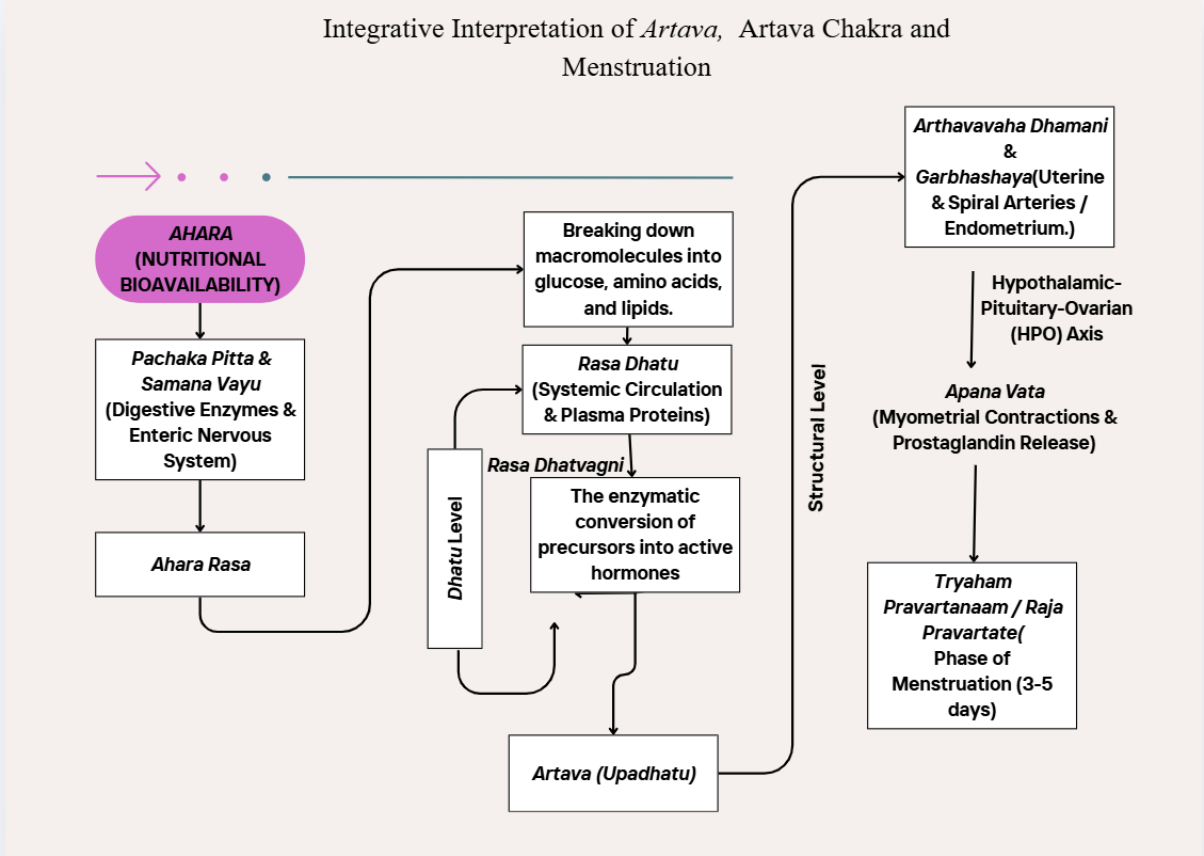
metalloproteinases that mirror ongoing tissue repair and inflammation.

These molecular dynamics provide a biological basis for the observable variations in menstrual flow, colour, and consistency traditionally emphasized in *Ayurveda* diagnostic methods.

Integrative Interpretation of *Artava* and Menstruation

A comparative analysis revealed conceptual parallels between *Ayurveda* and modern perspectives. Ayurveda's emphasis on *Rasa* circulation and *Dhatu* nourishment corresponds with hormonal transport and endometrial perfusion. *Shuddha Artava* may be interpreted as a clinical expression of optimal endocrine balance and endometrial functionality.

Ayurveda's qualitative descriptors of *Artava* may reflect underlying biochemical and cellular changes. Emerging studies on menstrual blood proteomics suggest molecular correlates for changes in colour, consistency, and odour, lending scientific plausibility to classical observations.



Discussion

The concept of *Artava* represents one of the most clinically relevant intersections between Ayurveda concept of *Artava* and women's reproductive health. Ayurveda's strength lies in its ability to detect early functional disturbances through qualitative assessment, whereas modern medicine excels in quantifying hormonal and structural abnormalities.

Artava Pariksha exemplifies Ayurveda's diagnostic philosophy, wherein sensory observation serves as a surrogate marker for systemic imbalance. However, the lack of standardization and objective validation has limited its acceptance in contemporary practice. Integrating modern analytical tools such as biochemical assays, cytology, microbiome analysis, and proteomics, with traditional *Artava* assessment may bridge this gap.

From a research perspective, *Artava* offers a unique non-invasive biological sample that is rich in diagnostic information. A Systematic correlation of Ayurveda descriptors with molecular findings could transform *Artava Pariksha* into an evidence-based integrative diagnostic tool. Furthermore, longitudinal studies correlating *Artava* characteristics with hormonal profiles and reproductive outcomes are required. Advances in mass spectrometry, molecular profiling, and extracellular vesicle analysis have positioned menstrual blood as a promising non-invasive diagnostic and prognostic biofluid for various diseases. Recent proteomic studies have identified disease-specific molecular endotypes in menstrual blood, particularly in unexplained infertility and endometrial disorders, enabling personalised diagnostic stratification. Integrating these technologies with the Ayurveda framework of *Artava* assessment may facilitate the development of future evidence-driven diagnostic models that combine traditional qualitative evaluations with molecular precision[13].

Challenges and Opportunities in Integrating Traditional and Modern Perspectives

Integrating Ayurveda concepts of *Artava* with modern biomedical frameworks presents both challenges and opportunities. A primary barrier arises from epistemological differences, as Ayurveda emphasizes qualitative, individualized assessment methods such as *Artava Pariksha*, whereas the modern system relies on standardized, quantitative diagnostics. Limited standardization, insufficient clinical validation, and sociocultural stigma surrounding menstruation further constrain the broader acceptance of *Artava-based* diagnostics.

Despite these challenges, an integrative interpretation of *Artava* offers considerable potential for enhancing patient care. Ayurveda's focus on early functional disturbances allows for timely intervention before structural pathology develops. When complemented by modern diagnostic tools, including hormonal and molecular analyses of menstrual blood, *Artava*-based assessments may support more comprehensive and individualized management of gynaecological disorders.

Conclusion

Artava is a central concept in *Ayurvedic* gynaecology, that reflects systemic health, reproductive function, and *Dosha–Dhatu* equilibrium. Classical descriptions of its formation, characteristics, and variations provide a sophisticated framework for understanding physiology and pathology of menstruation. The convergence of Ayurveda's *Artava Pariksha* with modern menstrual blood research underscores the potential of integrative diagnostic frameworks that emphasize early functional changes in the menstrual cycle. By integrating classical Ayurvedic principles with contemporary medicine paradigms, this approach establishes a translational framework capable of advancing both research and clinical practice in women's reproductive health.

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References

1. Arunadutta, commentator, Ashtanga Hridaya, Sharira Sthana, Garbhavakranti Sharira, 1/1,with commenteries of Arunadatta & Hemadri, edited by Bhishgaacharya Harishastri Paradakara, 9th edition, Choukhamba Orientalia, Varanasi, 2005

2. Shastri Ambikadutta. Sushruta Samhita of Sushruta, Sharira Sthana. Chapter, Verse Chaukambha Sanskrit Sansthan, 2018; 27: 3-10.

3. Prof. Premvati Tiwari, Ayurvediya Prasuti Tantra Evam Streeroga, Part 2, Chapter No-2,Choukhambha Publication, 2004, Page No-64

4. Shastri Ambikadutta, Susruta Samhita of Susruta with Ayurveda-TattvaSandipika, Varanasi: Chaukhambha Sanskrit Sansthan, Sharira Sthana, 20154 2: 19-15

5. Feng, Y.; He, Y. The Secrets of Menstrual Blood: Emerging Frontiers from Diagnostic Tools to Stem Cell Therapies. Front. Cell Dev. Biol. 2025, 13, 1623959. https://doi.org/10.3389/fcell.2025.1623959 PMid:40909174 PMCid:PMC12405216

6. Brennan, K.; Vaiciuleviciute, R.; Uzieliene, I.; Pachaleva, J.; Kasilovskiene, Z.; Piesiniene, L.; Bernotiene, E.; Mc Gee, M. M. Menstrual Blood Serum Extracellular Vesicles Reveal Novel Molecular Biomarkers and Potential Endotypes of Unexplained Infertility. Sci Rep 2025, 15 (1), 11974. https://doi.org/10.1038/s41598-025-95818-w PMid:40199990 PMCid:PMC11978918

7. Yang, H.; Zhou, B.; Prinz, M.; Siegel, D. Proteomic Analysis of Menstrual Blood. Molecular & Cellular Proteomics 2012, 11 (10), 1024-1035. https://doi.org/10.1074/mcp.M112.018390 PMid:22822186 PMCid:PMC3494145

8. Sharma S, editor. Ashtanga Sangraha of Vriddha Vagbhatta, Sharira Sthana; Chapter, Verse. Varanasi: Chaukambha Sanskrit series, 2019; 268: 1-24.

9. Yadav DrR, Kapil DrS, Shukla DrS. Artava -A Potent Dignostic Tool In Gynaecology. IRJAY. 2021;04(02):159-68. https://doi.org/10.47223/IRJAY.2021.4207

10. Dunselman GAJ, Vermeulen N, Becker C, et al. ESHRE guideline: management of women with endometriosis. Hum Reprod. 2014;29(3):400-412 https://doi.org/10.1093/humrep/det457 PMid:24435778

11. prTindal, K.; Filby, C. E.; Cousins, F. L.; Ellery, S. J.; Vollenhoven, B.; Palmer, K.; Gordon, A.; Gargett, C. E.; Davies-Tuck, M. The Composition of Menstrual Fluid, Its Applications, and Recent Advances to Understand the Endometrial Environment: A Narrative Review. F&S Reviews 2024, 5 (3), 100075. https://doi.org/10.1016/j.xfnr.2024.100075

12. Critchley HO, Maybin JA, Armstrong GM, Williams AR. Physiology of the endometrium and regulation of menstruation. Physiol Rev. 2020;100(3):1149-1179. https://doi.org/10.1152/physrev.00031.2019 PMid:32031903

13. Topol EJ. High-performance medicine: the convergence of human and artificial intelligence. Nat Med. 2019;25(1):44-56. https://doi.org/10.1038/s41591-018-0300-7 PMid:30617339