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AYURVEDIC INSIGHTS INTO PRIMARY AMENORRHEA: CONCEPTUAL UNDERSTANDINGAND HOLISTIC APPROACHES

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ABSTRACT

Primary amenorrhea is a medical condition characterized by the absence of menstrual periods in a female by the age of fifteen, in the absence of secondary sexual characteristics, or by the age of thirteen with the presence of secondary sexual characteristics. It represents a delay or failure in the onset of menstruation, and its diagnosis often involves an evaluation of hormonal, anatomical, or genetic factors that may contribute to the absence of menstrual cycles in an individual who has reached the typical age of menarche. This condition can lead to a prolonged absence of menstrual periods, contributing to potential long-term consequences such as increased vulnerability to bone density loss, infertility, hormonal imbalances, and ramifications for reproductive and metabolic health. This emphasizes the importance of consistent monitoring and appropriate medical interventions. In *Ayurveda*, the correlation of primary amenorrhea is intricately associated with the concepts of *Vandhya*, *Varta*, *Shandhi Yonivyapad*, etc., representing conditions related to menstrual disorders and disruptions in the female reproductive system. The causative factors of primary amenorrhea are attributed to *Beeja Dosha* (imbalance at the level of reproductive elements) and *Dushtartava* (vitiation of female reproductive tissues or hormones). These Ayurvedic concepts highlight the role of imbalances in the reproductive elements (*beeja*) and the integrity of reproductive tissues (*artava*) in the occurrence of primary amenorrhea. The understanding of primary amenorrhea within the Ayurvedic framework involves addressing these factors by restoring equilibrium in doshas and promoting the proper functioning of reproductive elements for optimal menstrual health. Integrating these interconnected factors

with modern concepts allows for a comprehensive evaluation ofreproductive health.

KEYWORDS: Primary amenorrhoea, *Anartava, Dushtartava*, Amenorrhoea.

INTRODUCTION

Menarche

Menarche holds significance as a crucial milestone in puberty. Defined as the first menstrual period in a female adolescent, menarche typically occurs between the ages of 10 and 16, with the average age of onset being 12.4 years.[1] The determinants of menarche age are continuously being researched; socioeconomic conditions, genetics, general health, nutritional status, exercise, seasonality, and family genetics are thought to play a role.

Menarche occurs in the setting of a maturing hypothalamic-pituitary-ovarian (HPO) axis and relies on the following processes: normal hypothalamic and pituitary function, normal female reproductive anatomy, normal nutrition, and the general absence of other intervening chronic illnesses. In addition to the female reproductive organs (ovaries, fallopian tubes, uterus, and vagina), menarche is influenced by complex hormonal interactions involving the hypothalamus, pituitary gland, and ovaries. The adrenal glands, thyroid, and pancreas have also been shown to play a role in menarche. Thyroid hormones are necessary for normal menses, and their deficiency or excess can inhibit menarche or lead to abnormalities in existing menstrual patterns. Abnormally elevated insulin or adrenal androgens can affect normal ovarian oestrogen production and decrease pituitary production of LH. The hormone leptin also appears to play a role in maintaining normal menstrual cycles. Any structural or functional alterations in these components can lead to primary amenorrhea.

The HPO axis

Hypothalamic-Pituitary-Ovarian axis—is crucial in understanding ovulatory disorders, the leading cause of Amenorrhoea classified into three categories by the World Health Organization.[2]

Group I ovulation disorders encompass hypothalamic failure leading to hypogonadotropic hypogonadism, accounting for approximately 10% of ovulation disorders. This category includes conditions like hypogonadotropic hypogonadism, panhypopituitarism, autoimmune or infectious hypophysitis, pituitary adenomas, etc.

Group II disorders involve dysfunction of the HPO axis, constituting 85% of ovulation

disorders. This dysfunction is caused by conditions such as Polycystic Ovary Syndrome (PCOS), abnormal body mass index (BMI), and endocrinopathies.

Finally, Group III includes ovarian insufficiency, previously known as ovarian failure, with significant implications leading to oocyte depletion. This group involves multiple complex etiologies causing premature ovarian insufficiency (or failure), including genetic, iatrogenic, and acquired causes.

Disruptions at any level of the HPO axis can impact the normal hormonal regulation required for the menstrual cycle. Therefore, primary amenorrhea can be considered a potential consequence when there are abnormalities or failures in the HPO axis as mentioned above.

Primary amenorrhoea

Primary amenorrhea is defined as the absence of menstruation in a girl by the age of 16, without the development of secondary sexual characteristics, or by the age of 14 with the absence of menstruation despite the presence of secondary sexual characteristics.[3] Approximately 2–5% of teenage girls experience primary amenorrhea.[4]

Importance of studying primary amenorrhoea

Comprehensive study of primary amenorrhea is imperative due to its role as a diagnostic gateway to various underlying reproductive health issues. Investigating its aetiology is essential for early identification and tailored interventions, as it can impact fertility, bone health, metabolic equilibrium, and psychological well-being. Understanding the intricacies of primary amenorrhea is paramount in optimizing patient care, preventing long-term complications, and promoting overall health in affected individuals.

Classification of causes of Primary amenorrhoea[5]

Primary amenorrhea can be classified into physiological and pathological causes based on underlying factors:

(a) Physiological Causes

(1) Constitutional Delay: Some girls experience a delay in menstruation onset due to a slower maturation process, known as constitutional delay. This familial condition results in puberty and menstruation occurring at a later age than average.

(2) Delayed Puberty: Genetic factors, nutritional status, or other developmental factors may contribute to delayed puberty, occasionally leading to primary amenorrhea.

(b) Pathological Causes

(1) Chromosomal Abnormalities: Conditions like Turner syndrome (45,X), Androgen Insensitivity Syndrome (AIS), and other chromosomal abnormalities can result in primary amenorrhea.

(2) Anatomical Abnormalities: Structural issues in reproductive organs, such as absence or malformation of the uterus (e.g., Mullerian agenesis or imperforate hymen), can cause primary amenorrhea.

(3) Hormonal Disorders: Conditions disrupting normal hormonal regulation, like hypothalamic-pituitary dysfunction, polycystic ovary syndrome (PCOS), or hyperprolactinemia, may lead to primary amenorrhea.

(4) Gonadal Dysfunction: Ovarian disorders, including ovarian failure due to genetic factors, autoimmune conditions, or other pathological processes, can contribute to primary amenorrhea.

(c) Pathophysiological attributes of primary amenorrhoea in modern science

In contemporary scientific understanding, delayed puberty is attributed to two primary factors. The first set of reasons includes malnutrition or undernutrition and extended periods of intense physical activity etc.[6] Women engaging in regular exercise and significant weight loss are prone to developing hypothalamic (or 'athletic') amenorrhea. This is associated with an increase in the hormone ghrelin, leading to the inhibition of the hypothalamic-pituitary-ovarian axis. Elevated ghrelin concentrations can disrupt the amplitude of GnRH pulses, resulting in reduced pituitary release of LH and FSH also, research indicates that inadequate intake of vitamin A is a contributing factor to delayed maturation in late adolescence.

Additionally, deficiencies in iron and protein, leading to anaemia and lower BMI, are associated with a higher likelihood of delayed menarche.

The second set involves defects in the reproductive system, encompassing defects like Mayer–Rokitansky–Küster–Hauser syndrome, Kallmann syndrome, turner syndrome, Asherman syndrome etc.[7] These conditions may arise from a defect in the development of the Mullerian duct (congenital cause), diminished secretion of female hormones (hormonal level cause), or heightened levels of testosterone. Elevated testosterone levels are associated with reduced breast size, decreased body hair growth, and alterations in overall body characteristics.

Major Causes of Primary Amenorrhea at Different Levels of HPO axis

More elaborated causes of primary amenorrhoea at different levels of HPO axis arementioned here-

(A) Hypothalamus

(1) Hypothalamic Dysfunction

Insufficient secretion of gonadotropin-releasing hormone (GnRH) from the hypothalamus can disrupt the pulsatile release of follicle-stimulating hormone (FSH) and luteinizing hormone (LH), leading to primary amenorrhea.

(2) Stress-Related Amenorrhea:

Chronic stress or extreme physical exertion can affect the hypothalamic-pituitary-ovarianaxis, suppressing GnRH secretion and subsequently halting menstrual cycles.

(B) Pituitary

(1) Pituitary Tumours

Tumours or structural abnormalities in the pituitary gland can interfere with the secretion of FSH and LH, disrupting the normal hormonal cascade required for menstruation.

(2) Pituitary Hormone Deficiency

Deficiencies in FSH and LH secretion due to pituitary dysfunction can result in insufficient stimulation of the ovaries, leading to primary amenorrhea.

(C) Gonads (Ovaries)

Ovarian Failure: Premature ovarian failure or dysfunction results in inadequate production of oestrogen and failure to release eggs, causing primary amenorrhea.

(D) Genetic Disorders

Chromosomal Abnormalities: Conditions like Turner syndrome or Androgen Insensitivity Syndrome can affect gonadal development and function, leading to primary amenorrhea.

(E) Reproductive Tract

(1) Mullerian Agenesis

Absence or underdevelopment of the uterus and upper part of the vagina, known as Mullerian agenesis, can be a structural cause of primary amenorrhea.

(2) Imperforate Hymen

A congenital condition where the hymen completely covers the vaginal opening can obstruct menstrual blood flow, causing primary amenorrhea.

(3) Structural Abnormalities

Anomalies in the structure of the reproductive tract, such as the absence of a cervix or a blocked outflow tract, can impede normal menstruation.

(F) Thyroid Disorders

Hypothyroid Cretinism may lead to primary amenorrhoea.

Understanding these major causes at the hypothalamic, pituitary, gonadal, and reproductive tract levels is essential for a systematic approach to diagnosing and managing primary amenorrhea based on the specific underlying factors.

Complications or prognosis of primary amenorrhea

The complications or prognosis of primary amenorrhea can vary depending on the underlying aetiology. Potential medical ramifications may include:

(a) Infertility Risk

Depending on the cause, primary amenorrhea may predispose individuals to infertility due to disrupted ovarian function, hormonal imbalances, or structural abnormalities impacting reproductive capacity.

(b) Metabolic Consequences

Some cases of primary amenorrhea, such as polycystic ovary syndrome (PCOS), may entail metabolic disturbances, including insulin resistance, obesity, and an increased risk of cardiovascular complications.

(c) Osteoporosis Susceptibility

Prolonged oestrogen deficiency resulting from primary amenorrhea can lead to decreasedbone mineral density, potentially increasing the risk of osteoporosis and associated fractures.[8]

(d) Psychological Impact

Chronic amenorrhea may contribute to psychological distress, including anxiety and depression, with potential long-term implications for mental health.

(e) Cardiovascular Health Considerations

Hormonal imbalances associated with certain causes of primary amenorrhea may influence cardiovascular health, potentially contributing to adverse outcomes such as an increased risk of heart disease.

(f) Endocrine Dysfunction

Disorders causing primary amenorrhea may disrupt the normal endocrine milieu, affecting various systems, including the hypothalamic-pituitary axis and peripheral glands, leading to multi-systemic implications.

(g) Complications Related to Underlying Syndromes

If primary amenorrhea is associated with specific syndromes (e.g., Turner syndrome), individuals may be at risk for additional health challenges and systemic abnormalities characteristic of these syndromes.

(h) Malignancy Concerns

In rare instances, primary amenorrhea may be linked to conditions predisposing individualsto a higher risk of reproductive organ malignancies, necessitating vigilant monitoring.

Understanding and addressing the underlying causes of primary amenorrhea are essential for mitigating these potential complications. Individualized medical management, including hormonal interventions, lifestyle modifications, and psychological support, can play a crucial role in minimizing the long-term health risks associated with this condition.

Co-relation of menarche with reference to Ayurveda

The *Nirukti* or etymology of *artava* is described as '*Rutou bhavam artavam*,' signifying a substance that flows out at a specific time duration. On the other hand, *Anartava* is elucidated as '*Ayogya rutushu utpannah*,' indicating a condition that may not manifest during the proper period or is unseasonable.

Menarche in *Ayurveda* is said to occur after 12 years of age.[9] Before this age, there is supposed to be absence of menstruation due to *dhatu aparipurnatva* or underdevelopedbodily tissues leading to delayed puberty or absence of menstruation.[10]

Various conditions of physiological amenorrhoea in Ayurveda

Physiological amenorrhoea in *Ayurveda* can be seen corelated with before puberty phase,

garbhavastha (during pregnancy as there is *avrodha* in *artava vaha srotas*), in *sutikavastha* (due to *aparipurnatva* of dhatus and utilization of *rasa dhatu* for formation of *stanya* leading to *anartava*) and in *Jaravastha* (due to all *dhatu kshaya*).

Various co-relations of Primary amenorrhoea in *Ayurveda*

(a) Shandhi Yonivyapad

As per *Charak Acharya*, female offspring delivered by a mother experiencing *Vata* imbalance may encounter *Shandhi Yonivyapad* in medical parlance. As per *Acharya Charak*, such a female child is anticipated to exhibit insufficient breast development and a disinterest in sexual intercourse.[11] In contrast, *Sushruta Acharya* distinctly delineates the absence of menses and breast development, referred to as *Anartava* and *Astana*, as indicative symptoms of *Shandhi Yonivyapad*.[12] In modern concepts, this condition arises from embryological developmental defects, congenital hyperplasia of the adrenal cortex, or hypoactivity of the adeno-hypophysis. Consequently, there is an aberrant secretion of ovarian hormones, leading to disruptions in both breast development and regular menstruation.

(b) Vandhya Yonivyapad

Vandhya Yonivyapad is characterized by the statement '*Vandhya Nashtartavam Vidyat*' as per *Sushruta Acharya*, indicating the loss of *Artava* in *Vandhya Yoni*.[13] The commentator *Dalhana* notes that the sole distinction between *Vandhya* and *Shandhi* lies in the presence and absence of breast development, respectively.[14] In the *Charaka Samhita*, *Vandhya* is categorized among *beeja* and *beejabhaga* disorders. The verse '*Yada Hiasya Shonite Garbhashaya Beejabhaga Pradosham Apadyate, Tada Vandhya Janayati*' as per *Charak Acharya* elucidates that if there is a defect in the *beeja bhaga* (chromosome) responsible for uterine development, it results in the birth of a female child with *Vandhya* characteristics.[15] Commentator *Chakrapani* further expounds that since the *Beeja* responsible for both *Garbhashaya* and *Artava* is the same, the absence of both *Garbhashaya* and *Artava* occurs in this context. *Acharya Charaka* has elucidated that the occurrence of *Vandhya* (sterile child) and *Varta* (incomplete female) is attributed to *beeja dosha*. When the *beeja* or *beejabhagavayava* responsible for the development of various reproductive organs/parts is adversely affected by various factors, the resulting child may have defective components of the respective reproductive organs/parts. If the *beejabhaga* of the mother, responsible for the development of *Garbhashaya*, is excessively vitiated, it leads to the birth of *Vandhya*.

Similarly, when the *beejabhagavayava* of the mother, responsible for producing organs that

characterize a female, is excessively vitiated, the outcome is *Varta* (not a complete female).[16]

Similar co-relations of amenorrhoea

(a) *Arajaska Yonivyapad*

It is outlined in the verse '*Arajaska Yonivyapad Yonigarbhashayastham Cheta Pittam Sandushayet Asruka Sa Arajaska Mata Karshya Vaivarnya Janani Bhrisham* in *Charak ChikitsaSthana* Chapter 30, and involves the elevation of *Pitta*, affecting the *Yoni* and *Garbhashaya*, leading to symptoms such as emaciation and pallor.[17] *Chakrapani* adds *Anartava* as a symptom, resembling amenorrhea associated with systemic disorders, anorexia, or athlete's amenorrhea, where the absence of menstruation is linked to decreased body fat crucial for normal menstrual function. This could be corelated with dhatu *aparipurnatva* and may cause amenorrhoea. Since there is no specific mention of age or pubertal factor here, *arajska* can be co related with primary amenorrhoea in young girls before menarche.

(b) Nashtartava

It described as '*Doshatiaavrutta Margatvat Artavam Nashyati Striya*' in *Sushruta Shareer sthana* which suggests the absence of *Artava* in females due to *Dosha* obstruction.[18]

Commentator *Dalhana* clarifies that the obstructing *Doshas* are *Vata* and *Kapha*, and the treatment for *Nashtartava* involves mitigating *Vata* and *Kapha*. He emphasizes that increased *Pitta* may cause excessive menstruation, attributing the responsibility of *Doshas* to *Vata* and *Kapha*. Additionally, he notes that '*Nashta*' implies invisible formation. This condition is observed in obesity cases where excess fat disrupts hormones, particularly oestrogen, leading to pituitary suppression and subsequently amenorrhea. If seen before menarche, this condition may be corelated to primary amenorrhoea.

(c) *Shushka Yonivyapat*

This is elucidated by *Sharangdhar*'s commentator *Adhamalla*, and is equated with *Vandhya Yonivyapat* described by others. While both conditions manifest only amenorrhea as a symptom, it initially seems that *Vandhya* and *Shushka* are synonymous. In *Vandhya Yonivyapad*, amenorrhea is linked with sterility, whereas in *Shushka Yoni*, it is associated with dryness, oliguria, constipation, and pain. This condition is believed to originate from the suppression of bladder and bowel reflexes, suggesting a possible manifestation of Hypothalamic amenorrhea.

The role of hypothalamus, is well-established in the aetiology and treatment of amenorrhea. While certain other conditions described in Ayurvedic texts may induce amenorrhea, they do not specifically mention this symptom. Considering the involvement of *Rasa* & *Rakta* in this type of amenorrhoea, it can be come under the classification of primary amenorrhea.[19]

In *Ayurveda, Katambhara* and *Jataharini* are the disorders, specifically associated with primary amenorrhoea, which are mentioned by *Kashyapa Acharya*.

(d) *Katambhara*

Katambhara is characterized by a lack of menstruation due to a structural blockage in the genital tract, particularly the cervical canal (*Yonimukha*). This blockage impedes the normal flow of menstrual blood. Females with *Katambhara* may exhibit primary amenorrhea along with symptoms such as pelvic pain, discomfort, or a sense of fullness in the lower abdomen. According to *Kashyapa Acharya, Katambhara* is primarily caused by an imbalance in the *Vata dosha*, leading to the obstruction of the physiological processes involved in menstruation.[20]

(e) *Jataharini*

Jataharini involves the expulsion or destruction of the seed (*Beeja*) or the ovum, leading to primary amenorrhea. This condition is characterized by the repeated loss of embryos or foetuses during various gestational periods. Females with *Jataharini* may experience recurrent miscarriages, making it challenging for them to carry a pregnancy to term.[21] The condition is associated with factors affecting the reproductive tissues and processes.

Jataharini is often attributed to an imbalance in the *Tridoshas*, particularly a vitiation of the *Pitta dosha*. This doshic imbalance affects the formation and sustenance of the embryo, or loss of ovum before fetilization or anovulation leading to primary amenorrhoea.

(f) *Shushka Revati*

As per Kashyapa Acharya, '*Ashodhasa Varshapraptha Ya Stree Pushpam Na Pasyathi Pramlan Bahurakucha Thamahu Sushkarevatheem'* means that the onset of menarche has not occurred by the age of 16, accompanied by underdevelopment of the arms, hips, and breasts. This is a subtle corelation with primary amenorrhoea.[22]

Nidana

(a) *Sahaja Nidana* encompasses abnormalities in the formation of the *Garbhashaya* due to

issues with *Beeja* (germ cell), *Beejabhaga* (zygote), or *Beejabhagavayava* (embryonic components). When there is an abnormality or absence of *Beejabhaga* related to the formation of the uterus, it may result in congenital structural abnormalities of the uterus or complete absence, leading to the condition of *Anartava*.

(b) *Jataja Nidana* involves factors arising from the individual's birth and constitution. In the case of a *Kapha*-dominant prakriti woman, imbalances in *Vata* and *Kapha* caused by inappropriate *Ahara* (diet) and *Vihara* (lifestyle) choices may lead to *Nashtartava* due to *avarana* (obstruction).[23] The improper *Ahara* and *Vihara* practices that cause vitiation of *doshas* and *kshaya* (depletion) of all dhatus can become significant factors contributing to *Anartava*. Additionally, external factors like *Abhighata* (trauma), *Vyayama* (excessive physical activity), and *ativyavaya* (overindulgence) can be considered as *viharaja* (lifestyle-related) *nidana* for the development of *Anartava*.

(c) *Dushtartava* is characterized by irregularities in ovarian hormones. The *Artavavaha srotas* play a crucial role in the creation and upkeep of the menstrual cycle, serving as channels responsible for transporting nutrients or hormones to the female reproductive structures.[24] Disruptions or trauma to the *Artavavaha srotas* can result in the impairment of the *Artava* (menstrual blood), leading to *Artava Nasha* (menstrual absence).

Samprapti

The Ayurvedic aetiopathogenesis of *Nashtartava* is outlined in the *Sushruta Samhita*. The term *'Avrutta'* implies the occurrence of *Srotorodha* (obstruction), and the entire passage in the *Samhita* indicates that the cessation or complete stoppage of the *Artava* occurs due to *Srotorodha* in the *Artavavaha Srotas*.

Samprapti ghataka

Dosha	*Vata (Apana and Vyana), Pitta (Pachaka),Kapha (Kledaka)*
Dushya	*Rasa, Rakta*
Updhatu	*Artava*
Srotas involved	*Rasavaha, Artavavaha*
Nature of Srotodushti	*Sanga*
Adhisthana	*Artava vaha Srotas*

Ayurvedic Approaches to Prevent Primary Amenorrhea

(a) Pre-conceptional Care

Prioritizing the enhancement *of ritu, kshetra, ambu*, and *beeja* qualities is crucial, aligning Ayurvedic principles to prevent *vikrutha Garbha* (fetal abnormality) and ensure genetic and

chromosomal integrity. Implementation of *Garbha Sambhava Samagri*, focusing on the purification of *beeja*, *beejabhaga*, and *beejabhaga avayava*, fosters an optimal environment for the conception of healthy progeny.[25]

(b) Diet and Activities

Embracing a well-balanced *ahara*, as per *Ayurveda*, during all three stages—before conception, during pregnancy, and post-delivery—is foundational for nurturing a healthy womanhood.

Vyayama, a prescribed exercise plan, coupled with avoiding sedentary influences ensures *dinacharya* and *ritucharya* adherence, contributing to hormonal balance and reproductive well-being.

(c) Mental Health (Psychological and Psychosomatic wellbeing)

Recognizing the interconnectedness of *manas* (Mind) and *sharira*(body) underscores the importance of sattvic mental states during intrauterine and reproductive age periods.

Early detection of structural abnormalities and hormonal imbalances, coupled with proper medical support, aligns with Ayurvedic principles to maintain the equilibrium of doshas and overall well-being.

(d) Management of Structural and Functional Defects

Correcting *Artava dosha* through *shodhana* therapy and adherence to *Garbhini Charya* principles becomes imperative to address structural and functional defects and ensure a healthy conception.

Ayurvedic wisdom emphasizes the need for familial tendencies assessment and the execution of specific medicines and regimens outlined in *Garbhinicharya*.

(e) Improvement of Quality of Life

Integrating *ritumaticharya, garbhini charya,* and *sutika paricharya* principles into daily life, emphasizing seasonal regimens and purification measures, contributes to the correction of genetic and epigenetic factors.

Incorporating sex education, awareness of reproductive health, and mental health importance in the school curriculum aligns with Ayurvedic values, fostering a balanced lifestyle and

ensuring the well-being of women for generations to come.

DISCUSSION

The Ayurvedic perspective on primary amenorrhea, encapsulated in the concepts of *Vandhya Yonivyapad, Shandhi Yonivyapad, Shushka Yonivyapad, Jataharini, Katambhara, Arajaska*, and *Shushka Revati*, delves into the intricate interplay of *doshas, dhatus*, and *srotas. Vandhya Yonivyapad*, characterized by infertility and reproductive disorders, is intimately linked to primary amenorrhea. *Shandhi Yonivyapad* sheds light on the disruption of the physiological rhythms governing the female reproductive system. *Shushka Yonivyapad* addresses the dryness or atrophy of reproductive organs, a concept pivotal in understanding the physical conditions affecting normal menstrual function and thus address primary amenorrhea.

Jataharini, Katambhara, as per *Kashyap Samhita*, adds nuance to the Ayurvedic exploration of primary amenorrhea. *Shushka Revati*, associated with dryness or atrophy of the reproductive system, echoes the concept of *Shushka Yonivyapad*. Specific references in Ayurvedic texts are essential to unravel the intricate details of these terms and its correlation with the absence of menstruation aligning with primary amenorrhoea. *Arajaska*, signifying the absence of menstrual blood, also aligns with primary amenorrhea.

In the Ayurvedic approach to primary amenorrhea, the emphasis lies on individualized therapies addressing the root cause, be it doshic imbalances, obstructions, or atrophy. Dietary guidelines, herbal formulations, and lifestyle modifications are employed to harmonize the doshas, nourish the dhatus, and promote overall well-being, offering a holistic perspective on women's reproductive health.

The Ayurvedic understanding of female reproductive health encompasses the concept of *Beejabhagavayava Dushti*, leading to *Putipraja,* where the female faces challenges in producing progeny. Modern genetic parameters support this, attributing structural anomalies in the fetus to genetic mutations, often caused by consanguineous marriages resulting in gene deletions. Conditions like Mayer Rokitansky Kuster Hauser syndrome, characterized by underdeveloped reproductive organs, align with Ayurvedic *Yonivyapats* such as *Vandhya, Shandi*, and *Jataharinis* like Shuskarevati.

Both *Yonivyapat* and *Jataharini* find their roots in *Mithya Ahara* and *Vihara*, emphasizing the role of improper lifestyle and diet in reproductive disorders. Causes like *Tulya Gotra Vivaha*

(consanguineous marriage) result in *Beejadosha*, impacting the growing female fetus.

Adequate *Garbhini Paricharya* and *Sadvritta Palana* are crucial for preventing *Tridosha Dushti*, ensuring the well-being of the fetus.

The management approach involves preconception genetic counseling to prevent congenital malformations, along with *Beeja Samskara* for favourable progeny. *Garbhini Paricharya*, focusing on maternal care, becomes pivotal as *Matrajadi Shad Bhava* significantly influence fetal development.

Acharya Sushruta outlines four main factors for proper conception. *Ritu*, denoting the ovulation period, is the most fertile time for *Beejotsarga* and *Garbhadhana*. *Kshetra*, representing the female reproductive system, should be healthy, with the uterus supporting implantation. *Ambu*, signifying proper nourishment by Rasa and balanced hormone levels, is crucial. *Beeja*, encompassing *Artava*, requires normal ovum.

Abnormalities in any of these factors can lead to *Vandhyatwa*. *Jataharinis*, destructive forces, can cause repeated expulsions of fetuses at different gestational periods or absence of menarche or menses leading to primary amenorrhoea. *Acharya Kashyapa* identifies various *Jataharinis* characterized by such expulsions, highlighting the complexity of factors influencing reproductive health in *Ayurveda.*

CONCLUSION

In conclusion, the Ayurvedic perspective on the concept of primary amenorrhea provides a profound understanding of terms like *Vandhya Yonivyapad, Shandhi Yonivyapad, Shushka Yonivyapad, Jataharini, Katambhara, Arajaska, and Shushka Revati* reveals a holistic understanding of the intricate balance required for the proper functioning of the female reproductive system and comprehensive approach to addressing primary amenorrhea.

Ayurveda, with its emphasis on *dosha* equilibrium, emphasizes the role of individualized therapies, dietary modifications, herbal formulations, and lifestyle adjustments to address primary amenorrhea. The correlation of these Ayurvedic concepts with modern genetic parameters and reproductive disorders demonstrates the timeless relevance and adaptability of Ayurvedic principles. The etiological factors, encompassing *Mithya Ahara, Vihara, and Adharma*, underline the importance of a balanced lifestyle, proper nutrition, and ethical conduct in maintaining reproductive health. *Tulya Gotra Vivaha* and *Beejadosha* resulting

from consanguineous marriages highlight the significance of considering genetic factors in Ayurvedic diagnostics. The line of management, ranging from preconception genetic counseling to *Garbhini Paricharya* and *Sadvritta Palana*, emphasizes preventive measures and holistic care throughout the reproductive journey. The detailed exploration of factors like *Ritu, Kshetra, Ambu, and Beeja* provides a comprehensive understanding of the prerequisites for proper menstruation. In essence, *Ayurveda* offers a timeless and comprehensive approach to addressing primary amenorrhea, considering not only the physical aspects but also the mental, emotional, and spiritual dimensions of a woman's well-being which will enable practitioners to provide high quality medical care and be a beacon of hope to a wide array of patients presenting with primary amenorrhoea.

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