Common Gynecologic Problems in Female Athletes

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Many women now complete in strenuous exercise. The sports participation is a wise experience for a teenage athlete. Common gynecologic problems found in female athletes are delayed menarche, menstrual dysfunction and dysmenorrhea.

Menstruation is the most important female characteristic; they have a feeling of good health when they have regular menstruation. Sport participation has been reported to delayed menarche when the sport activity began before puberty. Altered menstrual cyclicality can approach 70% in strenuously exercising women. Menstrual dysfunction has been associated with a significant weight loss, decreased body fat, previous history of menstrual dysfunction, stress and intensive training.[1]

In ballet dancers, high-intensity training was associated with late onset of menarche, menstrual disorders, lower weight and height development.[2] a comparative study in Greece showed that menarcheal age in gymnasts and non athletes groups were 13.8 years and 12.5 years respectively with a statistical difference with $p < 0.01$,[3] that means gymnasts had delayed menarche. Frisch and McArthur[4] have theorized suggesting that a level of at least 17% body fat is critical for the onset of menstruation. On the other hand more recent studies have suggested that delayed menarche may be due to genetic factors.[5] A lack of any pubertal development can indicate hypothalamic, pituitary, or gonadal failure. An interruption of normal pubertal development can indicate ovarian failure or pituitary failure, as happens with pituitary neoplasm. Normal breast and pubic development in the absence of menstrual periods can indicate an abnormality of the reproductive organs.[6] Athletic training in adolescent females is important for their well-being; intensive training and insufficient diet may have a negative influence on growth, probably due to energy deficiency and impairment of growth hormone-insulin-like growth factor I axis. Intensive training and inadequate energy intake may induce delayed menarche and menstrual dysfunction.[7] Warren and Chua[8] reported that exercise-induced amenorrhea can be an indicator of an energy drain, and presence of other components of the female athletes triad-bone density loss and eating disorders must be determined as well. Skeletal problems related to nutritional and hormonal deficiencies in this population are of very high priority. Nattiv and colleague[9] studied female athletes who may have clinical manifestations including eating disorders, functional hypothalamic amenorrhea, and osteoporosis. A study of sexual maturation in Thai girls showed that the average age of menarche of a Thai girl was 12.5 years.[10] The athlete who has not had a period by the age of 16 is consider to have primary amenorrhea and should be evaluated to confirm that sports participation, but not other diseases, has delayed the onset of menstruation.[11] Many athletes approximately 46% of runners have oligomenorrhea (cycles greater than 35 days, but less than 90 days).[12] Five to fifteen percent of athletes have been reported to have secondary amenorrhea, a cessation of menses for greater than 3 months.[13] Secondary amenorrhea is more common in those participating in sports such as running and ballet and less common in those participating in sports such as swimming and cycling.[14] Physical stress, emotional stress, and weight loss appear to be the biggest contributing factors to the development of secondary amenorrhea. Athletes who have not had a menstrual period for one year should not assume that this prolonged amenorrhea is secondary to athletic participation but should evaluate to exclude other abnormalities such as hypothyroidism, hyperprolactinemia, polycystic ovarian syndrome (PCOS) or pregnancy. The International Olympic Committee (IOC) has defined amenorrhea as one period or less per year.[6]

Amenorrhea is a chronically estrogen-deficient state because estrogen facilitates calcium uptake into bone.[15] Athletes with amenorrhea are at risk of osteoporosis and stress fracture, much like postmenopausal women. Prevention of this loss of bone mass is one of the main goals of treating amenorrhea. Oral contraceptives are a good choice for athletes who have no contraindications. This should be combined with and evaluation of the athletic diet - exercise regimen and any underlying stress.

Female athlete health problems have three components: (1) eating disorders (2) amenorrhea or oligomenorrhea, and (3) osteoporosis or osteopenia. Risk factors include chronic dieting, low self-esteem, family dysfunction, physical abuse, biologic factors, perfectionism, and a lack of nutrition knowledge.[16] Trigger factors include an emphasis on body weight for performance or appearance and pressure to lose weight from parents, coaches, judges, and peers and a drive to win at any cost. The prevention of female athlete health problems is unknown but improving dietary intake should be done to restore energy and it is not necessary to reduce the intensity of training. Increasing the nutritional status of woman will reverse many of the symptoms associated with disordered eating, reverse menstrual disorders, and help reduce the risk of osteopenia or osteoporosis. Of course, many of these changes will ultimately increase muscle strength, decrease the risk of injury, and thus increase training and sports performance.[17] Leptin is the main peptide produced by the adipocyte and still has important peripheral actions, including its role on the ovarian tissue. When energy imbalances induced by exercise and/or deficient food ingestion occur, low leptin levels are observed, leading to a reduction of pituitary hormone (GnRh, LH, FSH) and hypothalamic amenorrhea.[18] Leptin replacement therapy is currently under intensive investigation especially on exercise associated amenorrhea because the relationship between physical exercise and the plasma concentration of leptin is not clear.[19]

Dysmenorrhea is less common in athletes than in nonathletes. Nonetheless, this condition can be disabling during competition. Athletes with persistent disabling dysmenorrhea should undergo gynecologic evaluation to rule out other diseases such as endometriosis and pelvic infection.

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