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COMMON GYNECOLOGICAL PROBLEMS IN FEMALE ATHLETES

Sports Science

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ABSTRACT

Females are continually in a hurry both at work and home. Dynamic in Sports at all dimensions; ladies currently take a gander at exercise as a fundamental piece of life. As of late, the therapeutic calling has turned out to be less male commanded with more research being embraced on ladies' medical problems. Articles on an assortment of Women's Health issues and Women and Sports Medicine are being distributed with expanding recurrence. Self help books and guides to women's health are readily available. There are many good sources of information on women's health and this review also throws light on gynecological issues faced by women athletes and suggests some recommendation to combat such issues.

KEYWORDS

Menstruation, Amenorrhoea, Athlete Traid, Optimum Training

INTRODUCTION

The status of ladies in present day India is a kind of incongruity the ladies have left the anchored area of their home and are currently in the combat zone of life, completely protected with their energy, ability and extinguish for their status. They had demonstrated themselves that they can walk shoulder to bear with men. Physical activity which was mainly male dominant has now been accepted by women folk also. They are also realizing the importance of physical fitness. Cooperation in recreational physical movement is as a rule generally recognized to give noteworthy medical advantages Regular exercise has been linked with many advantages on body function, such as improved insulin sensitivity,1 Decreased visceral adipose tissue mass, and improvements in cardiovascular function,2

But intense exercise has been reported to cause luteal phase defects (oligomenorrhea and other menstrual dysfunctions) and amenorrhea.3 Many studies have confirmed that intense exercise causes oligomenorrhea and amenorrhea in athletes,4 and moderate exercise was associated with a slightly increased probability of longer cycles, as undesirable side effects of exercise that offset its positive effects.

Some studies reported that 68% to 98% of cadets who had regular menstrual periods before training became irregular[5,6]

Forty female participants who attended a training course for an officer at the Korea Third Military Academy, and had regular menstrual periods were enrolled. Menstrual questionnaires and fasting blood samples were collected before entry and at 4-week intervals for 8 weeks. Seventy percent of participants with regular menstrual periods before developed irregular during the training course.[7]

High-intensity training before menarche postpones its onset.[8]
Altered menstrual cyclicality can approach 70% in strenuously exercising women.[9,10]

Therefore the objective of the article is to highlight gynecological issues, challenges and remedies faced by women sports participants.

The dangers to sportswomen of activity related menstrual brokenness and weakened bone wellbeing are vital and under-perceived. Exercise related menstrual dysfunction may include any abnormality along the continuum of luteal phase deficiency, annovulation, oligomenorrhoea, amenorrhoea, and delayed menarche.[11]

When menstrual dysfunction (in particular amenorrhoea) occurs in sportswomen in combination with low bone mass and energy deficit, the syndrome is termed the “female athletic triad.” This is a complex and poorly understood disorder seen in females who exercise intensively 12,13. described female Athlete Triad is a life-threatening syndrome defined by disordered eating, amenorrhea, and osteoporosis.[14]

Athletes in lightweight sports (distance running, gymnastics, lightweight rowing) are at high risk, although the syndrome can arise in relation to any sport.[15]
Menstrual disorders occur in 24-26% of runners. In distance runners, the prevalence of amenorrhea increases from 3% to 60% as training distance increases >3 to <113 km per week.[16,17]

Subclinical menstrual disorders are found in both highly trained18.and recreational eumenorrheic athletes,19; luteal deficiency or anovulation was found in 78% of eumenorrheic recreational runners in at least one out of three menstrual cycles.

The long term effects tend to be highest in young athletes who start intense exercise before menarche. These athletes have an increased chance of delayed menarche, impairment of growth and pubertal progression, subsequent menstrual dysfunction, and suboptimal bone health. The incidence of menstrual irregularity is much higher in athletes than in sedentary women. Secondary amenorrhea in athletes is as high as 44%. The incident in general population is only 2% - 5% 20 Delayed menarche is influenced by genetics as well as training[21].

Mechanism of menstrual dysfunction

It is mainly due to hypothalamic dysfunction and abnormality in gonadotropin releasing hormone pulse generator.reproductive abnormalities are mainly due dysfunction at hypothalamus-pituitary-gonadal axis or hypothalamic-pituitary-adrenal axis.

Atheletes involved in sports that demand leanness have disruption of hypothalamus-pituitary-ovarian axis resulting in hypoestrogeneism. While sports demanding strength have activation of hypothalamus-pituitary-adrenal axis resulting in hypoandrogen.

GnRH produced in hypothalamus acts on the pituitary cells to secrete FSH and LH, which stimulate the follicular development. The developed follicles secrete estradiol, progesterone, inhibin, activin, and follistatin. Estradiol and progesterone, at different concentrations and/or ratios, either positively or negatively control the feedback of hypothalamic-pituitary axis in regulating the secretion of GnRH, FSH and LH. Inhibin and follistatin selectively suppress, whereas activin enhances the secretion of FSH in the pituitary, thus affecting menstruation.[22-24]

Body Composition and fat Mass

Frisch and McArthur have theorized suggesting that a level of at least 17% body fat is critical for the onset of menstruation.[25].

Energy expenditure when exceeds the dietary energy intake, GnRH working is affected and hence may cause delayed menarche.

Exercise Stress

Intensive training with calorie restriction causes change in GnRH pulsatility and so LH suppression.

Pathological Eating Disorder

It is common in sports where esthetic appearance is important, both

bulimia and anorexia nervosa are seen and these nutritional changes may affect menstruation.

Hormone Leptin

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.[26,27]

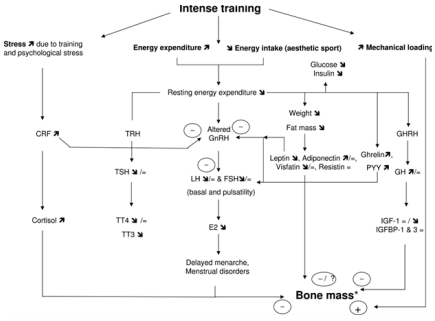
Hyperandrogenism

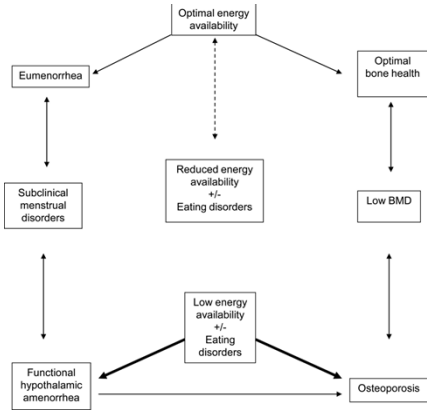
Atheletes engaged in sports like swimming or rowing show activation of hypothalamus-pituitary-adrenal axis resulting in higher levels of androgen especially DHEA-5. This hyperandrogenism along with low fat may result in ammenorhea.

Hyperprolactinemia

Daily precipitation of prolactin after intense exercise may lead to menstrual dysfunction Increased levels of beta endorphins Beta endorphins that tend to accumulate with exercise cause LH suppression.

This menstrual dysfunction affects bone mass predisposing to osteopenia and when such girls are made to do exercise it leads to irreversible bone damage, fractures etc.[28-32]





Recommendations

- Female athlete experiencing menstrual irregularities and disturbances should undergo a detailed medical investigation and management before further training.
- Extensive studies to further evaluate the effect of delayed menarche on athletes' reproductive health are needed.
- Because energy drain can be a primary contributor to athletic menstrual dysfunction, recommendations for energy and the macro- and micronutrients should be reviewed.33
- Pharamacological treatment options should be explored and worked upon judiously.
- Management by a multidisciplinary team. 34

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