SHORT COMMUNICATION

Anti Mullerian Hormone and its relevance

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INTRODUCTION

Anti-Müllerian hormone (AMH) is a hormone which is produced and secreted by reproductive tissues, including the testicles in males and the ovaries in females. It is synthesized in early pregnancy and before the delivery of a baby. This hormone may be referred to as Mullerian-inhibiting hormone; or Mullerian inhibiting factor; orMullerian-inhibiting substance [1]

It has been reported that AMH is produced by the testicles in boys, which promotes the growth and improvement of other male reproductive organs. It has been noted that, the concentration of AMH continues to be high in males till puberty and it begins to decrease after the stage of puberty [2].

On the other hand, Anti-Mullerian Hormone inhibits the development of female reproductive organs [3]. The AMH level in young girls continues to be decreased until puberty when the ovaries start to produce it and levels increase. AMH will constantly decrease over their reproductive years, becoming very low and eventually undetectable after menopause. AMH is necessary for a woman during her childbearing years [4].

In women, AMH may be used to evaluate ovarian function and fertility; as well as evaluation of polycystic ovarian syndrome (PCOS), or to evaluate the effectiveness of ovarian cancer treatment. Similarly. It has been reported to be used to evaluate the presence of nonspecific external sex organs (ambiguous genitalia) and/or function of the testicles in a male infant [5].

ANTI MULLERIAN HORMONE TEST RELEVANCE

An Anti-Mullerian Hormone test is a type of a blood test, which is performed to evaluate the functioning of the ovaries in females.This test evaluate the ability of a female in producing eggs and its fertilization for pregnancy.It also contritesin testing the ovarian reserve which include how many potential egg cells a woman has left [6].

It has been reported in female that, AntiMullerian Hormone test are used for various diagnosis which include to predict the start of menopause ,and to find out the reason for early menopause. In the same vein, AMH test helps to monitor types of ovarian cancer in women as well as to find out the reason for the amenorrhea or the lack of menstruation [7]. Similarly, it is used to diagnose the causes for missed or delay in menstruation in young girls at the age of 15.It checks infants with genitals that are not clearly identified as male or female and it helps in diagnosing polycystic ovary syndrome (PCOS) [8].

Furthermore, AMH test could be ordered on a woman who will be undergoing assisted reproduction procedures such as *in vitro* fertilization (IVF); the concentration of AMH present is associated to her likely responsiveness to therapy. A decreased level of AMH reflects poor ovarian response, indicating that a decreased number of eggs would be retrieved after ovarian stimulation [9].

It has been reported that during a woman's childbearing years, a reduced concentration of AMH may imply low ovarian reserve with diminishing fertility, resulting in minimal or less responsiveness to IVF treatment. It may imply premature ovarian failure [10].

An elevated level of AMH is often seen with PCOS but is not diagnostic of this condition. Elevated AMH could imply an increased or even excessive responsiveness to IVF and a need to tailor the procedure accordingly. A decreasing level and/or significant decline in AMH may signal the imminent onset of menopause [11].

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Negative to low levels of AMH are normal in a female during infancy and after menopause [12].

When AMH is used as a tool to monitor an AMH-producing ovarian cancer, then a decrease in AMH indicates a response to treatment and an increase may indicate cancer recurrence.

In a male infant, absence or low levels of AMH may indicate a problem with the AMH gene that directs AMH production and may be seen with absent or dysfunctional testicles. Lack of male hormones may result in ambiguous genitalia and may cause abnormal internal reproductive structures. Normal levels of AMH and androgens in a male infant whose testicles have not descended imply that they are present and functional but not physically located where they are supposed to be [13].

DISORDERS OF THE ANTI-MULLERIAN HORMONE

If the amount of AMH is insufficient during the development of a baby in the fetus, then both male and primary female organs may develop. A baby born with ambiguous genitalia may not be instantly recognized as either male or female [14].

In conclusion, Anti-Müllerian hormone appears to be the best endocrine marker for assessing the age-related decline of the ovarian pool in healthy women; thus, it has a potential ability to predict future reproductive lifespan.

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