Researchers develop accurate way to predict the age when women will hit the menopause

EurekAlert

Rome, Italy: Researchers have developed a way of accurately predicting when women will hit the menopause using a simple blood test. The average difference between the predicted age and the actual age that the women in their study reached the menopause was only a third of a year, and the maximum margin of error was between three and four years.

Dr Fahimeh Ramezani Tehrani will tell the 26th annual meeting of the European Society of Human Reproduction and Embryology in Rome today (Monday) that her findings have implications for women and their doctors; if the results of the research are supported by larger studies, it means that women will be able to discover early on in their reproductive life what their expected age at menopause will be, so that they can plan when to start a family.

By taking blood samples from 266 women, aged 20-49, who had been enrolled in the much larger Tehran Lipid and Glucose Study, Dr Ramezani Tehrani and her colleagues were able to measure the concentrations of a hormone that is produced by cells in women's ovaries anti-Mullerian Hormone (AMH). AMH controls the development of follicles in the ovaries, from which oocytes (eggs) develop and it has been suggested that AMH could be used for measuring ovarian function. The researchers took two further blood samples at three yearly intervals, and they also collected information on the women's socioeconomic background and reproductive history. In addition, the women had physical examinations every three years. The Tehran Lipid and Glucose Study is a prospective study that started in 1998 and is still continuing.

Dr Ramezani Tehrani, who is President of the Reproductive Endocrinology Department of the Endocrine Research Centre and a faculty member and Associate Professor of Shahid Beheshti University of Medical Sciences in Tehran, Iran, said: "We developed a statistical model for estimating the age at menopause from a single measurement of AMH concentration in serum from blood samples. Using this model, we estimated mean average ages at menopause for women at different time points in their reproductive life span from varying levels of serum AMH concentration. We were able to show that there was a good level of agreement between ages at menopause estimated by our model and the actual age at menopause for a subgroup of 63 women who reached menopause during the study. The average difference between the predicted age at menopause using our model and the women's actual age was only a third of a year and the maximum margin of error for our model was only three to four years.

"The results from our study could enable us to make a more realistic assessment of women's reproductive status many years before they reach menopause. For

example, if a 20-year-old woman has a concentration of serum AMH of 2.8 ng/ml [nanograms per millilitre], we estimate that she will become menopausal between 35-38 years old. To the best of our knowledge this is the first prediction of age at menopause that has resulted from a population-based cohort study. We believe that our estimates of ages at menopause based on AMH levels are of sufficient validity to guide medical practitioners in their day-to-day practice, so that they can help women with their family planning."

Dr Ramezani Tehrani was able to use the statistical model to identify AMH levels at different ages that would predict if women were likely to have an early menopause (before the age of 45). She found that, for instance, AMH levels of 4.1 ng/ml or less predicted early menopause in 20-year-olds, AMH levels of 3.3 ng/ml predicted it in 25-year-olds, and AMH levels of 2.4 ng/ml predicted it in 30-year-olds.

In contrast, AMH levels of at least 4.5 ng/ml at the age of 20, 3.8 ngl/ml at 25 and 2.9 ng/ml at 30 all predicted an age at menopause of over 50 years old. The researchers found that the average age at menopause for the women in their study was approximately 52.

Dr Ramezani Tehrani concluded: "Our findings indicate that AMH is capable of specifying a woman's reproductive status more realistically than chronological age per se. Considering that this is a small study that has looked at women over a period of time, larger studies starting with women in their twenties and following them for several years are needed to validate the accuracy of serum AMH concentration for the prediction of menopause in young women."

SOURCE [1]

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http://www.mdtmag.com/news/2010/06/researchers-develop-accurate-way-predict-age-when-women-will-hit-menopause?qt-video_of_the_day=0

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