New hormone data can predict menopause within a year

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For many women, including the growing number who choose later-in-life pregnancy, predicting their biological clock's relation to the timing of their menopause and infertility is critically important.

Now, investigators from the University of Michigan have provided new information about hormonal biomarkers that can address the beginning of the menopause transition.

"In the end, this information can change the way we do business," said MaryFran Sowers, professor in the U-M School of Public Health Department of Epidemiology. "The information provides a roadmap as to how fast women are progressing through the different elements of their reproductive life."

A research team headed by Sowers examined the naturally occurring changes in three different biomarkers over the reproductive life of more than 600 women: follicle-stimulating hormone (FSH), anti-Mullerian hormone (AMH) and inhibin B.

Researchers found that the biomarker AMH declined to a very low or non-measurable level five years prior to the final menstrual period. This decline pinpoints a critical juncture in which a woman probably has so few follicles (eggs) that her fertility becomes increasingly questionable, Sowers said. They found that the changes in AMH and inhibin B concentrations were predictive of the time to menopause.

The research team also measured and reported the rates of change in FSH and used the information to identify different reproductive stages. Based on a woman's age and the level of FSH in the blood, researchers were able to describe four different stages that occur for women from their late reproductive period to the time of their final menstrual period.

While clinicians have the ability to measure these hormones now, they haven't had the kind of information about AMH, inhibin B or FSH collected on a large group of women over time to know how to relate levels or changes in the levels to fertility or to a menopause endpoint.

"People really want information about how long do I have and when will I have my final menstrual period," Sowers said. "Now we are beginning to say, 'If you have a specific FSH level combined with your age, this is the likelihood that you are in this reproductive stage.'

"We finally have numbers from enough women evaluated over a long time period to describe the reproductive aging process. It begins to give women and clinicians an expanded way to look at menses and endocrine events in terms of reproductive progression."

Sowers said additional study results have been submitted to describe the amount of bone loss that occurs at the different FSH stages.Thus, if women and clinicians know where women are in the various reproductive stages, it will further their understanding of the likely health implications associated with each stage.

Source: University of Michigan