ENDOCRINE CONFIRMATION OF LATE MENOPAUSE IN CHIMPANZEES

J. Herndon, J. Paredes, L. Chennareddi, M. Wilson

Yerkes National Primate Research Center of Emory University, Atlanta, Georgia, USA

Menopause, defined as the cessation of reproductive cyclicity, occurs in many primate species. In most such species, menstrual cycles continue until late life, past the average lifespan. Unlike most nonhumans, women cease cycling before the average age of death and often live more than of their post-pubertal life span in a state of infertility. The argument that late-life infertility merely reflects recent increases in average human longevity ignores the fact that substantial numbers of women have lived to old age throughout history, even when life expectancy was very short. Supporting the idea that long post-reproductive life is a unique human adaptation is our recent report that the age-related cessation of menses is uncommon in female chimpanzees, even in those living longer than 50 years, the approximate median age of menopause in women. This finding was based on more than 600 chimpanzee-years of observation but it lacked confirmatory hormonal measurements. In the present study, we provide hormonal data from urine samples collected from 12 female chimpanzees, of which 6 were aged, including 2 above the age of 50 years. Four of these aged chimpanzees showed clear endocrine signs of ovulation. In contrast, however, some young, middle-aged, and 2 old female chimpanzees were acyclic for reasons that are as yet unknown. While these data raise as many questions as they answer, they do clearly indicate late life cycles of menstrual bleeding in chimpanzees are associated with patterns of endocrine secretion indicative of fertility. NIH grants P51RR00165 and P01AG026423.