



Characteristics of the Perimenopausal Baboon

Data from the geriatric baboon colony at Southwest Foundation for Biomedical Research/Southwest National Primate Research Center

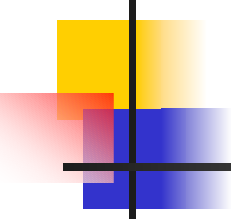
- More than 350 females aged 16-32
- Menstrual cycle data collected daily (perineal turgescence)
- Females classified as regularly cycling, irregular (perimenopausal), or acyclic (postmenopausal)



Menstrual Cyclicity

- Irregular cycles defined by changes in intermenstrual interval, cycle length, turgescence patterns
- Mean age for onset of irregular cycles (more than 20% cycles are irregular) = 16.2 yrs
- Mean age at perimenopause (more than 50% of cycles are irregular) = 18-19 yrs
- Mean age at menopause = 24-26 yrs
- No births recorded after age 24

data from Carey (unpublished), Honore (1998 and unpublished), Martin (2003)



Risk Factors/Pathophysiology in Perimenopausal Baboons

- LDL cholesterol is higher in irregular females than in age-matched regulars, and hepatic sterol 27-hydroxylase activity is decreased (Chen 1998)
- Bone mineral density decreases significantly in females aged 18-23, and vertebral fractures increase (Aufdemorte 1993, Rogers 1995)
- Irregular or acyclic females aged 20-30 years exhibit vaginal atrophy (Hubbard 1997)



Hormone Data

	Estradiol <u>pg/ml</u>	FSH <u>(ng/ml)</u>
Premenopausal (n=92, mean age= 20)	76.6 (7.1)	1.8 (0.2)
Perimenopausal (n=75, mean age=21)	58.5 (7.3)	3.6 (0.4)
Postmenopausal (n=24, mean age=27)	35.8 (6.2)	8.7 (1.3)

All values are given as mean (SEM)

Data from Honore, unpublished (preliminary data)



Significance of Hormone Data

- These most recent data confirm previous studies in aging female baboons:
 - Estradiol levels are lower in peri/postmenopausal females
 - FSH levels are increased in peri/postmenopausal females

Data from Carey (unpublished), Honore (1998, 2000 and unpublished)



Conclusions

- Baboons undergo a spontaneous transition from regular cycles through irregular cycles to acyclicity
- This pattern is similar to the transition of women through perimenopause to menopause/postmenopause
- Hormonal and physiological data suggest that the baboon is a suitable model for studies of the perimenopausal period