Menopause is a natural process involving dramatic declines in ovarian hormones—estrogens and progesterone. Many women experience an array of adverse symptoms that impair quality of life. Since the publication of the Women's Health Initiative (WHI), women have been left questioning whether, when, and how long to take hormone treatments for menopausal symptoms. The focus of this project is to examine the effects of timing and duration of estradiol (E2) relative to the loss of ovarian hormones. Both human and animal studies show that a strong social support network, such as close friends (human) or being caged with family members (animals) leads to a lower amount of depressive and anxiety symptoms (Coleman et al., 2011, Jacobs et al., 2000). There have been very few studies looking at the effects of estrogen replacement therapy on social behavior; available findings indicate that E2 increases social interaction and enhances social memory, but underlying mechanisms are not known (Tang et al., 2005). The current study examines the effects of E2 treatment on ultra sonic vocalizations (USVs). USVs are measured as an index of social and affective behavior in rats. We have designed a novel behavioral paradigm involving social pairs of rats housed as cage mates.

**METHODS:**

The animals used in this study were ovariectomized at 4 months of age and were treated with either E2 or vehicle (cholesterol) for a duration of 3 months. All animals were sacrificed one week after all behavior testing was completed. They were 7 months at the time of sacrifice.

**Ultra Sonic Vocalization Setup**

Day 1: Baseline

Each animal is placed in the chamber alone for 5 minutes; vocalizations and video are recorded.

Day 2: Three five minute trials

Trail 1:

Each cage mate is placed in either side of the chamber separated by a Plexiglas divider. Vocalizations and videotape are recorded.

Trail 2:

The divider is removed and animals are allowed to interact. Vocalizations and videotape are recorded.

Trail 3:

One cage mate is left in the original chamber. The other is placed in another identical chamber. In each chamber the vocalizations are recorded on different channels. Individual behavior is also videotaped.

**RESULTS:**

Figure 2 illustrates the mean total calls for both the estradiol (E2) and vehicle groups during each trial.

**LITERATURE CITED:**


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