

Development of a Circadian Variation of Plasma Oxytocin Concentration in the Late Gestation Rhesus Monkey

Maria Seron-Ferre, Norman F. Taylor, Mary C. Martin, Rosemary D. Leake

Abstract

The 24-h pattern of oxytocin (OT) concentrations in maternal plasma was investigated serially from 112-168 days gestation in four chair-restrained pregnant rhesus monkeys. No change in the mean daily plasma OT concentration was observed with advancing gestational age; there was a change in the pattern of plasma OT secretion throughout the period, however. About 21 days from delivery (150.8 ± 1.8 days gestational age), plasma OT levels showed occasional fluctuations, distributed throughout the day. About 8 days from delivery (163.2 ± 2.4 days gestational age), a clear circadian pattern of OT was detected, with an acrophase at 2200 h. These results suggest that there is a relationship between the pattern of OT secretion and advancing pregnancy. This may account partially for the increase in uterine activity known to occur in term rhesus monkeys.