

NEUROSCIENCES

ROLE OF CENTRAL AMYGDALOID NUCLEUS IN THE HYPOTHALAMIC-PITUITARY-ADRENAL ACTIVATION ASSOCIATED WITH THE ONSET OF DIABETES MELLITUS ^{MAS}

Bret F. Bessac and Craig A. Johnston

Department of Pharmaceutical Sciences, University of Montana, Missoula, MT

The central amygdala nucleus (ACe) has been indicated to be involved in the secretion of adrenocorticotrophic hormone (ACTH) and glucocorticoid negative feedback of ACTH, in awakening and various acute stressors. The chronic stress of untreated diabetes mellitus (DM) altered ACTH and glucocorticoid secretion. Therefore, streptozotocin induced DM in rats was used as a model to examine the ACe involvement with ACTH secretion during chronic hyperglycemic stress. Bilateral lesions of the ACe decreased

ACTH concentration in plasma of diabetic rats (LD) compared to ACe lesioned non-diabetic (LC), control (C) and nonlesioned diabetic (D). An intravenous injection of 0.5 microgram corticotrophin-releasing hormone caused an equivalent increase of ACTH in all the groups with the LD rats ACTH remaining lower than the other rats; LC, C, & D. The lower level of ACTH in lesioned diabetics might implicate the ACe in overriding glucocorticoid negative feedback in chronically stressed rats.