

## **P-1399 - THE ROLE OF ENVIRONMENTAL EFFECTS ON THE MONOAMINERGIC REGULATION OF NEUROENDOCRINE RESPONSE**

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The endocrine disruptor compounds (EDC) are bioaccumulative chemical pollutants that can disturb the hormone mediated neuroendocrine functions and thereby may be implicated in various psychiatric disorders, such as anxiety and depression. Several monoaminergic neurotransmitters interact with the arginine-vasopressin (AVP)-related neuroendocrine system. The aim of our study was to investigate the effects of chlorobenzenes /CIB/, monurone /MU/ and diurone /DU/ in subtoxic exposure doses on AVP release and on the monoamine activated AVP secretions.

Pituitary cells, separated by enzymatic and mechanical methods from neurohypophysis of Wistar rats were used. Fourteen-day-old primary neurohypophysis cell cultures were treated with dopamine (DA), serotonin (5HT) ( $10^{-6}$ M) as monoamine activators and with EDC (CIB, MU, DU) ( $10^{-6}$ M) for two hours. AVP levels from the conditioned media were detected by RIA methods.

DA and 5HT treatment significantly increased the AVP levels in the cell culture medium as compared to the untreated control (DA:171.9 pgAVP/mg prot, 5HT:182.2 pgAVP/mg prot, control:47.3 pgAVP/mg prot). EDC treatment in itself did not change the AVP levels (CIB:42.1 pg AVP/mg prot, MU:53.3 pgAVP/mg prot, DU:46.3 pgAVP/mg prot), however, in combination with DA and 5HT, EDC caused a significant increase of AVP levels as compared to that observed after treatment with only DA and 5HT (DA+CIB:198.3 pgAVP/mg prot, 5HT+CIB:217.2 pgAVP/mg prot, DA+MU:193.9 pgAVP/mg prot, 5HT+MU:198.7 pgAVP/mg prot, DA+DU:188.5 pgAVP/mg prot, 5HT+DU:201.4 pgAVP/mg prot).

The medium AVP concentrations were increased after the monoamine activation. CIB, MU and DU influenced the monoamine activated AVP release from the neurohypophysis cells. This work was supported by: TAMOP 4.2.1/B-09/1/KONV-2010-0005.