MORPHINE EXPOSURE ALTERS 5´NUCLEOTIDASE ACTIVITY IN BLOOD SERUM OF RATS

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Introduction: drugs exposure in neonate can lead changes for the physiologic systems in adult life. Adenosine is involved in opioid antinociception and ATP is algogenic. NTPDases that hydrolyzes ATP, ADP, and 5´nucleotidase that hydrolyzes AMP to adenosine are the regulators of purinergic signaling in the blood. Objectives: evaluate the long-term effect of morphine exposure upon nucleotides hydrolysis in blood serum of rats. Materials and Methods: were utilized 8-day-old male *Wistar* rats divided into 2 groups which received saline (C) or morphine (M) 5 µg s.c. in the mid-scapular area, once a day for 7 days. At P80 the groups were divided into 4 groups which received saline (CS, n=6, MS, n=6) or morphine 5 mg/kg i.p. (CM, n=6, MM, n=6), once a day for 7 days. At P88 the rats were killed and the serum was obtained by centrifuged (5 min, 5000xg). The enzymatic assays were performed by the method described by Oses et al.(2004). The data were analyzed by one-way ANOVA followed by Bonferroni and expressed as mean$\pm$S.E.M of nmolPi/min/mg protein. Differences were considered significant if $P<0.05$. This work was approved by the Ethics Committee at UFRGS. Results and Conclusions: the groups didn't show difference in ATP and ADP hydrolysis (one-way ANOVA, $P>0.05$), but MM group showed a decrease of AMP hydrolysis (CS=1.04$\pm$0.1, CM=0.9$\pm$0.1, MS=0.7$\pm$0.07, MM=0.5$\pm$0.1, one-way ANOVA/Bonferroni, $P<0.05$). The decrease of AMP hydrolysis in blood serum observed in P88 resultant of morphine exposure in early life probably decrease of adenosine levels. Studies have demonstrated that the lower adenosine levels are involved in cardiovascular diseases and nociceptive alterations, adenosine A1 receptors are involved with vasodilatation and antinociception. Financial Support: CAPES, CNPq, FAPERGS.