Inflammation in rats born to mothers treated with dexamethasone 15cH during pregnancy: an immunohistochemical study

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ABSTRACT

In previous studies, we observed that rats born to mothers treated with dexamethasone 15CH (10-33M) had a higher level of mast cell degranulation and greater arteriolar dilation after the exposure of an inflammatory stimulus, suggesting the possibility of vertical transmission of the effects of ultra-diluted substances between mother and offspring. In this study, a more detailed assessment of the cellular events in acute inflammation was made using techniques of immunohistochemistry. The identification of adhesion molecules expression was made by the markers: anti-CD54 (ICAM-1) and anti-CD18 (β2-Integrin). The identification of inflammatory cells was performed by the markers anti-MAC387 (mononuclear cells) and anti-CD163 (active macrophages). Polymorphonuclear cells were identified by hematoxylin-eosin staining. The number of labeled cells per field was recorded, except for the anti-CD54 marker, whose intensity of staining on the endothelial cells was defined by scores assigned by two independent observers. The results point toward an up regulation of the whole inflammatory process in rats born to mothers treated with dexamethasone 15CH during pregnancy. This conclusion is justified by the following statistically significant (p≤0.05) findings: a) bigger mast cell degranulation and increased of arteriolar diameter; b) increased migration of polymorphonuclear cells in relation to the mononuclear cells; c) earlier expression of CD163 in monocytes, d) higher level of adhesion molecules expression.

Keywords: dexamethasone, pregnancy, high dilutions, inflammation.