Histamine Metabolism in Pregnant Mice

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The excretion of urinary free histamine has been found to be greatly increased during pregnancy in the mouse. The increase was evident soon after mating and continued until term. The excretion of histamine decreased on the day of delivery and on the next two days but did not reach the pre-pregnant value until about 2 weeks later. Using a non-isotopic method for estimating histamine formation in vitro, it was found that the increase in urinary excretion of histamine is probably accounted for by an increase in histamine formation in some tissues of the mother and foetus. During the initial stages of pregnancy, for example, the increase in histamine formation by the kidney and stomach of the mother was prominent, but during the later stages the foetal contribution was considerable. About half of the total histidine decarboxylase activity of the foetus resided in skin. In outline, these results agreed with those reported by Rosengren (1963) using an isotopic method.

Experiments were then performed to determine the nature of the stimulus initiating these changes in histamine formation. Attention has initially been focused on the sex hormones given individually and in combination but attempts to reproduce in non-pregnant mice the changes in histamine formation observed during pregnancy have not yet been successful.

Reference

Rosengren, E.: Histamine metabolism in the pregnant mouse. J. Physiol., Lond. 169: 499-512 (1963).