4 - Veterinary Anatomy

PO-074 - (23783) - THE ROLE OF VITAMIN A IN EMBRYONIC SKIN DEVELOPMENT

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None.

Both deficiency and excess of Vitamin A (VA) are known to have significant and well-documented consequences. This study investigates the impact of maternal Vitamin A supplementation on epidermal thickness during key stages of prenatal development in mice.

Pregnant mice were divided into two groups: a control group with no intervention and a VA group, in which mice received maternal Vitamin A injections on embryonic day 14 (E14). Foetal dorsal skin samples were collected from both groups on embryonic days 16 (E16) to 19 (E19) for histological analysis. Epidermal thickness was measured and compared between groups at each developmental stage.

Epidermal thickness increased progressively in both groups from E16 to E19. However, foetuses in the Vitamin A supplementation group exhibited significantly thicker epidermis on E17, E18, and E19 ($P \leq 0.001$), suggesting a robust effect of Vitamin A. No statistically significant difference was observed on E16 ($P = 0.339$).

Maternal Vitamin A supplementation significantly enhances epidermal thickness during critical stages of prenatal development, suggesting an important role in the formation and maturation of skin. A thicker epidermis may provide foetuses with greater protection against external factors and reduced heat loss. These findings highlight the potential benefits of optimising prenatal nutrition for skin development and its possible role in preventing congenital disorders. Further research is needed to elucidate the molecular mechanisms underlying this effect and to explore the clinical implications of maternal nutrition in foetal development.

Palavras-chave : Vitamin A, Skin, Developmental Biology