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Apoptosis-Related Protein Expression During Pre- and Post-Natal Testicular Development After Administration of Glucocorticoid *in utero* in the Sheep

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Pre-natal glucocorticoids are used in women at risk of preterm delivery to induce foetal lung maturation. However, glucocorticoids can produce negative outcomes for other tissues such as the reproductive system. We therefore tested the effects of pre-natal betamethasone on testicular morphology and apoptotic protein immune expression during pre- and post-natal development. Pregnant ewes (n = 42) bearing singleton male foetuses were randomly allocated to receive intramuscular injections of saline or betamethasone (0. 5 mg/kg) at 104, 111 and 118 days of gestation (DG). Testes were collected at 121 and 132 DG, and at 45 and 90 post-natal days (PD) and subjected to morphometric analysis (volume densities of sex cords and interstitial tissues; sex cord diameter). Immunohistochemistry (% stained area) was used to assess

On the other hand, pre-natal glucocorticoid administration can be highly beneficial and is commonly used in pregnant women at risk of preterm delivery to enhance survival of the offspring (Bishop 1981) by improving foetal lung maturation (Liggins and Howie 1972; Ikegami et al. 1997). However, *in utero* glucocorticoids in animals and humans can also reduce birth weight (Ikegami et al. 1997) and increase predisposition to cardiovascular and metabolic diseases (Tangalakis et al. 1992; Nyirenda et al. 1998; Fowden et al. 2006). In addition, glucocorticoids regulate the balance between mitosis and apoptosis and can therefore affect the total cell number in developing tissues and organs (King and Cidlowski 1998)