

Cardiovascular responses to graded degrees of hypoxaemia in the llama fetus.

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The fetal llama exposed to an intense degree of hypoxaemia did not increase cerebral blood flow, but showed a marked peripheral vasoconstriction. The same cardiovascular response is observed in fetal sheep submitted to a extremely severe hypoxaemia, when the initial compensatory vasodilatory mechanisms in brain and heart fail. To investigate whether the fetal llama responses to acute hypoxaemia are adaptive, or whether they are the result of a breakdown of mechanisms of blood flow redistribution that favours the central nervous system, we studied seven fetal llamas (0.6-0.7 of gestation) chronically-catheterized during 1 h of graded and progressive hypoxaemia. Fetal ascending aorta blood gases and fetal cardiac output and its distribution (radiolabelled-microspheres) were measured after 60 min of normoxaemia (B) and at the end of 20 min (H20), 40 min (H40) and 60 min (H60) of hypoxaemia. Data were analysed by ANOVA and Newman-Keuls tests. Each treatment resulted in a lower ($P < 0.05$) p