



Ibuprofen treatment improves neurovascular unit alterations in the growth restricted newborn

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BACKGROUND: Fetal growth restriction (FGR) is commonly caused by placental insufficiency, resulting in abnormal neurodevelopment of the brain.

- No treatment exists to protect the FGR newborn brain.
- Inflammation is a key mechanism in progression of brain impairment in the FGR newborn and may disrupt the neurovascular unit (NVU)
- We investigated whether ibuprofen, a NSAID, could reduce NVU disruption and brain neuropathology in FGR newborns using a pre-clinical pig model.

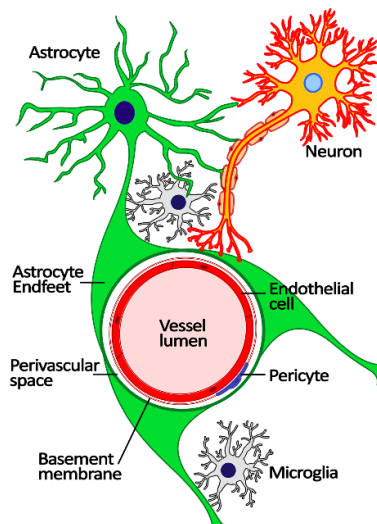


Figure 1. Cellular composition of the NVU. Resting glial cells form a tight functional unit that regulates the homeostasis of the brain environment.

METHODS: Normally grown (NG) and FGR (<10th centile) piglets were collected on day of birth and assigned to treatment groups: Ibuprofen was administered orally at each morning feed (day 1: 20mg/kg; days 2 and 3: 10mg/kg). Animals were euthanised on day 4. Brain outcomes were examined using histology and molecular approaches (minimum $n = 5$ per group).

