The structural brain changes underlying IUGR are poorly documented. The aim of this study was to describe structural brain changes induced by IUGR at the neonatal period.

**Methods**

**Survival (%)**

- AGA: 100%
- IUGR: 80%

**Birth weight (g)**

- AGA: 3000 g
- IUGR: 2000 g

**Neuronal arborization (number of dendrites)**

- Primary: AGA > IUGR
- Secondary: AGA > IUGR
- Tertiary: AGA > IUGR
- Quaternary: AGA > IUGR
- Quinary: AGA > IUGR
- Senary: AGA > IUGR

**Conclusions**

- IUGR is related with a complex pattern of brain reorganization at the neonatal period.
- Experimental models are still needed in order to characterize the structural brain changes.