FACULTY OF MEDICINE AND HEALTH SCIENCES

GE35 INTERNAL MEDICINE AND PAEDIATRICS - PAEDIATRIC NEPHROLOGY

Eva Degraeuwe[1,2], Ann Raes[1,2], Evelien Snauwaert[1,2], Joke Dehoorne[1,2], Agnieszka Prytula[1,2], Luc Cornette[3], Johan Vande Walle[1,2]

Affiliations: (1) GhentUniversity, (2) Ghent University Hospital (3) AZ Sint-Jan Campus Brugge

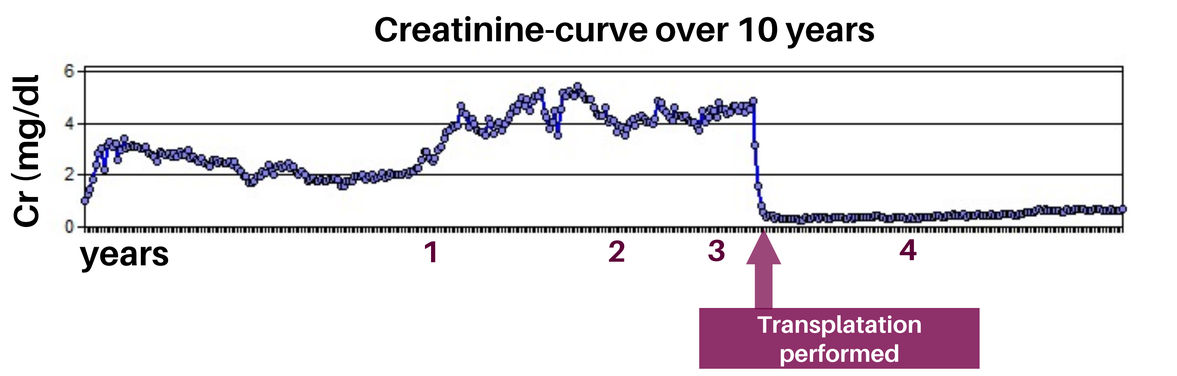
10-YEAR FOLLOW-UP OF THE TERATOGENIC EFFECTS AND NEUROCOGNITIVE DEVELOPMENT AFTER PRENATAL ACE-INHIBITOR EXPOSURE: A CASE REPORT

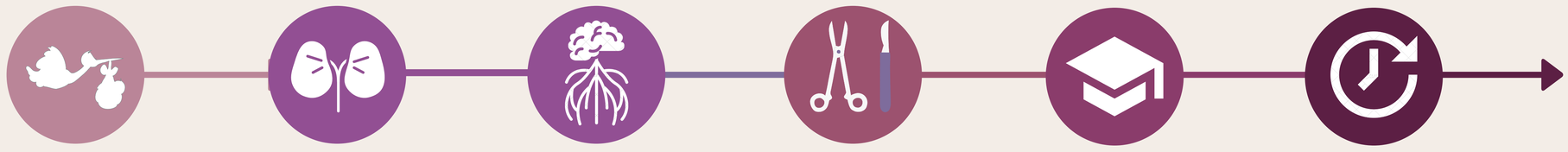
Background

Angiotensin-converting enzyme inhibitors (ACE-inhibitors) are among the **most frequently prescribed antihypertensive drugs** (1-4). Ingestion during pregnancy has a known increased risk of fetopathy, with **well-described congenital malformations** (2,3,5,6). Until now, little is known about the **long-term outcome** and the **impact** on a child's life. (7,8) The objective of this case report is to analyze long term outcome following prenatal exposure to ACE-inhibitors and describe the subsequent impact.

Case-report

- **10-year-old child** in follow-up for almost a decade at Ghent University Hospital.
- During his fetal period, his **mother suffered malignant hypertension** and had to continue her prescribed ACE-inhibitors despite known teratogenic effects.





33W infant born through semi-urgent ceasarean section, after **fetal exposure** of ACE-inhibitors

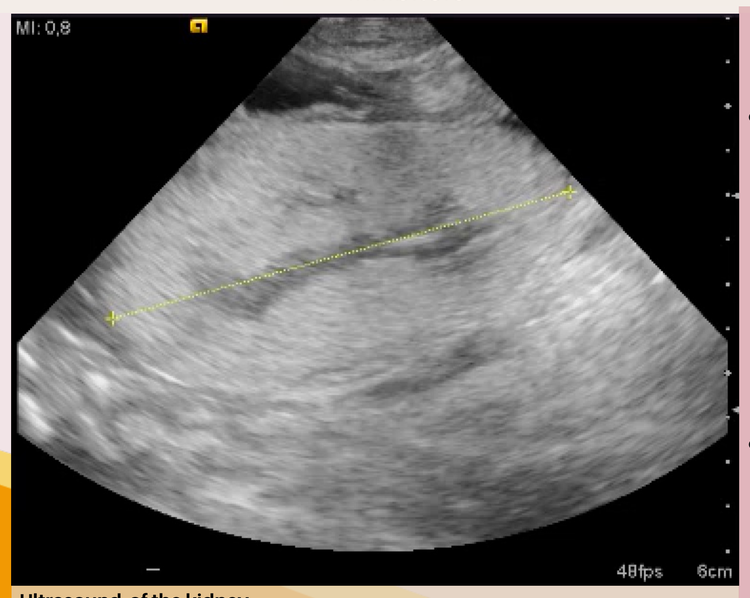
Ultrasound evidence of **bilateral hypodysplasia**.

Hypocalvaria with **motor impairment** (including right sided paresis) and developmental delay

Kidney transplantation due to end-stage kidney disease

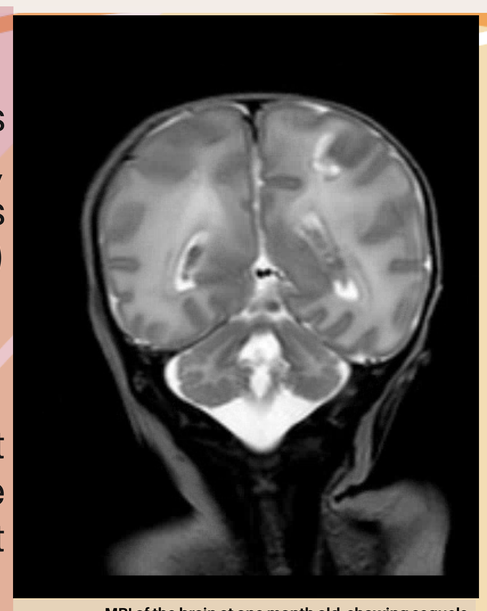
Due to developmental delay , intensive **guidance** was necessary.

Stable kidney function. Slowed psychomotor development.



Ultrasound of the kidney at one month old (right) showing a diameter of 6cm.

- Born with **hypocalvaria** (i.e. incompletely formed skull bones) as well as severe abnormalities of the central nervous system, resulting in **motor impairment** (including a right-sided paresis due to sequels of cortical haemorrhage) as well as developmental delay.
- **Initial** need for **dialysis**, renal function recovered partially, but caused the need for dialysis and kidney transplantation at the age of 4-years without post-operative complications and without further complications after discharge.



MRI of the brain at one month old, showing sequels of haemorrhage shown in centrum semioval left to cortical left and in the right periventricular area.

Discussion

Renal hypoplasia is well known in newborns prenatally exposed to ACE-inhibition, but there is a **gap in knowledge on other organs and long-term prognosis**.

This case documents that **other organs are equally involved**, and that long-term neurocognitive development is compromised in children having endured fetal exposure to ACE-inhibitors.

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