Fetal megacystis: a lot more than LUTO
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Objective
To study associate anomalies, final diagnosis, outcome and postnatal follow-up of fetal megacystis.

Methods
This was a retrospective cohort study carried out in the Fetal Medicine Units of all the 8 University Hospitals in the Netherlands. In the first trimester, fetal megacystis was defined by a longitudinal bladder diameter greater than or equal to 7 mm and in the 2nd and 3rd trimester as a bladder failing to empty during an extended US examination. Prenatal findings, outcome and postnatal follow-up were collected. The postnatal renal function was analyzed using the estimated Glomerular Filtration Rate (eGFR), calculated by the Schwartz formula, considering the length of the infants and the nadir creatinine within one year of life.

Results
541 cases of megacystis were identified. In 29% of pregnancies, fetal megacystis was diagnosed in the first trimester and in 71% thereafter. Associated anomalies were detected prenatally in 178 fetuses. The pregnancy was terminated in 187 cases and 33 cases were lost to follow-up. Forty-four intra-uterine fetal deaths and 33 neonatal deaths have been reported. The gestational age at the onset of oligo- or anhydramnios had an AUC of 0.83 for the prediction of perinatal death with an optimal cut-off at 27 weeks (sensitivity 82%; specificity 71%). For the 244 live-born infants, all available data on postnatal management, surgeries and medical examinations were reviewed. In 109 cases miscellaneous genetic, structural and chromosomal abnormalities were diagnosed after birth or at postmortem examination, such as: Trisomy 18 (22), Trisomy 13 (3), Trisomy 21 (3), Turner Syndrome (3), Fraser Syndrome (2), Beckett-Wiedmann Syndrome (3), Sotos syndrome (1). Of the surviving infants, LUTO was confirmed in 92 cases and the eGFR within one year of life was below 60 ml/min/1.73m2 in 33 cases (36%).

Conclusion
33% of cases with fetal megacystis presents associated anomalies detectable before birth and miscellaneous genetic, chromosomal or structural abnormalities can be confirmed in 20% of all megacystis. This should be taken into account in the diagnostic workup and in prenatal counseling. The gestational age at onset of oligo- or anhydramnios can reliably predict the risk of perinatal death, and a poor renal function is observed in one third of the surviving LUTO cases.