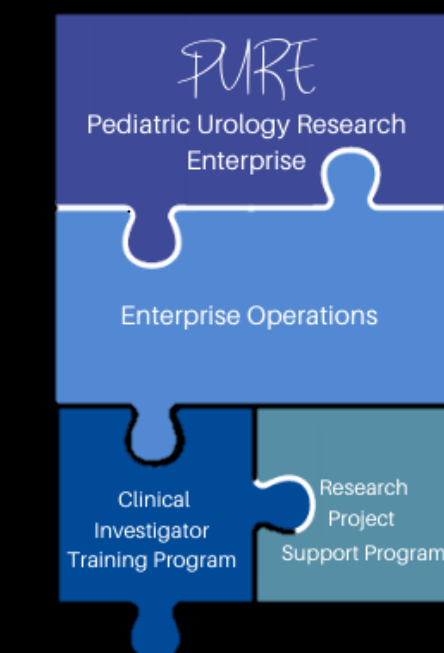


# Prenatal and Early Postnatal Outcomes for Fetuses with Anatomic or Functional Renal Agenesis

Ogundipe, E.A., Behrendt, N., Leavitt, C., Reynolds, R., Vemulakonda V.M.  
Pediatric Urology Research Enterprise (PURE), Children's Hospital Colorado,  
Division of Urology, Department of Surgery,  
University of Colorado Anschutz Medical Campus, Aurora, CO



Children's Hospital Colorado



## Background

- Fetuses with anatomic or functional renal agenesis develop with urologic anomalies traditionally lethal and incompatible with life.
- Amnioinfusion for fetuses with anhydramnios secondary to congenital anomalies of the kidney and urinary tract (CAKUT) have been successful in a few isolated cases.
- There is a paucity of data regarding the risks, benefits, and outcomes of serial amnioinfusion for fetuses with CAKUT anomalies.
- We report 5 infants who underwent serial amnioinfusion for in utero renal failure secondary to bilateral renal agenesis or bladder outlet obstruction.

## Methods

- A retrospective review was conducted for patients referred to the Colorado Fetal Care Center (CFCC) between 2013- 2018 for evaluation of complex CAKUT anomalies.
- Patients were included if they had severe oligohydramnios associated with bilateral renal agenesis, renal dysplasia, or other etiologies consistent with primary renal failure.
- Eligibility for amnioinfusion therapy was determined by a multidisciplinary team.
- Demographics, details of fetal intervention, survival to birth, need for ventilatory support, survival to dialysis, and 30-day mortality was abstracted from the EHR.

## Results

### Prenatal Demographics

	Eligible (n = 7)	Ineligible (n = 7)
<b>Mean Age</b>	29	29
<b>Race</b>	White: 6/7 NA: 1/7	White: 4/7 NA: 3/7
<b>Marital Status</b>	Married: 6/7 Single: 1/7	Married: 3/7 Single: 4/7
<b>Insurance Status</b>	Self Pay: 5/7 Medicaid: 1/7 Other: 1/7	Self Pay: 4/7 Medicaid: 0/7 Other: 3/7

### Treatment and Delivery

Case Number	Mother's Age	Gestational Age at Referral (weeks)	Number of Amnioinfusion's	Gestational Age at Birth (weeks)
1	35	21	10	35
2	30	21	18	35
3	25	20	3	24
4	28	22	15	32
5	27	17	1	32
<b>Average</b>	29	20.2	9.4	31.6

### Early Postnatal Outcomes

	Eligible (n = 5)	Ineligible (n = 2)
<b>Respiratory Intervention?</b>	Yes: 60% (3/5) No: 40% (2/5)	Yes: 50% (1/2) No: 50% (1/2)
<b>Survived to dialysis?</b>	Yes: 40% (2/5) No: 60% (3/5)	Yes: 0% (0/2) No: 100% (2/2)
<b>30-day Mortality</b>	60% (3/5)	100% (2/2)

Case Number	1 Year Post Partum
1	Alive
2	Deceased
3	Deceased
4	Deceased
5	Deceased
<b>Mortality</b>	80% (4/5)

## Conclusions

- In this small cohort, patients considered eligible were more likely to be white and married, suggesting potential bias or other complex confounding social variables.
- 1 month mortality was 60% (3/5) in patients who underwent intervention compared to a mortality of 100% (2/2) in patients who received no intervention.
- 1 year mortality for patients who underwent intervention was 80% (4/5).
- While these diagnoses are considered lethal without intervention, intervention is associated with significant morbidity and mortality.

## Implications

- Individuals carrying a pregnancy complicated by anatomic or functional renal agenesis face a difficult choice when considering intervention.
- These findings reinforce that treatment of these cases should be considered experimental and carry a significant morbidity and mortality.
- Large-scale multicenter trials are needed to determine the optimal indications for prenatal intervention.

## Disclosures

- I have no disclosures.