



Division of Urology

SCHOOL OF MEDICINE

UNIVERSITY OF COLORADO ANSCHUTZ MEDICAL CAMPUS

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

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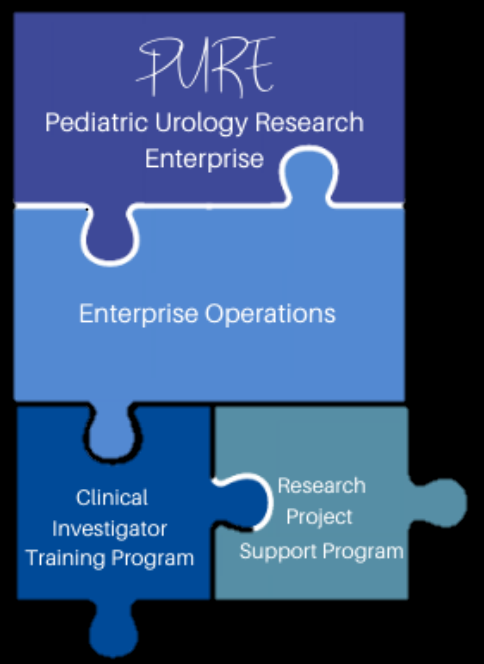
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Background

- 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)
Mean Age	29	29
Race	White: 6/7 NA: 1/7	White: 4/7 NA: 3/7
Marital Status	Married: 6/7 Single: 1/7	Married: 3/7 Single: 4/7
Insurance Status	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
Average	29	20.2	9.4	31.6

Early Postnatal Outcomes

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

Case Number	1 Year Post Partum
1	Alive
2	Deceased
3	Deceased
4	Deceased
5	Deceased
Mortality	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.