Abstract

Introduction

With the advent of novel fetal interventions, there has been increased interest in fetal intervention for previously “lethal” anomalies such as bilateral renal agenesis or other CAKUT diagnoses associated with in utero renal failure. While there have been rare reports of successful births following intervention in these cases, there is a paucity of data regarding the risks, benefits, and outcomes of intervention. To address this gap, this study reviewed our experience with fetal intervention for anatomic or functional renal agenesis.

Methods

A retrospective review was conducted for patients referred to the Colorado Fetal Care Center (CFCC) between 2013-2019 for evaluation of complex CAKUT anomalies. Eligibility for amnioinfusion was determined by a multidisciplinary team including social work and psychology. Data collected includes parent demographics, details of fetal intervention, post-natal course, and infant mortality.

Results

A total of five cases received fetal amnioinfusion for treatment of bilateral renal agenesis or bladder outlet obstruction. All five cases reached birth. 3/5 cases expired on day one of life. 1/2 of the remaining infants expired at 3 months secondary to peritoneal dialysis failure. The remaining infant is 3 years and 5 months. Developmentally, she is on track with cognitive and language skills but is behind with general motor skills. She continues to receive treatment for her several comorbidities and is under evaluation for renal transplantation. We observed a 30-day mortality of 60% and one-year mortality of 80%.

Conclusions

Individuals carrying a pregnancy complicated by anatomic or functional renal agenesis face a difficult choice when considering intervention. The sole surviving infant in this case series is 3 years and 5 months. She currently awaits renal transplantation. These findings reinforce that treatment of these cases should remain experimental and large-scale multicenter trials are needed to determine the optimal indications for prenatal intervention.