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Renal Trauma in Pediatric Patients Transferred to Tertiary Care Center



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BACKGROUND

⊕ Pediatric patients with severe kidney injuries who present to hospitals often need transport to tertiary trauma centers

⚡ Initial imaging, management, and outcomes have not been closely studied in transferred patients versus those who presented directly to a tertiary care center

Hypothesis: Transferred patients will have received diagnostic imaging outside of trauma protocols, and a greater distance from a tertiary care center will correlate with increased complications.

METHODS

👤 Chart review of 35 pediatric renal trauma patients of any AAST grade at single institution

👨‍👩‍👧 Compared transfer status and distance with diagnostic imaging used, immediate complications, number of follow-up visits, and long-term sequelae.

RESULTS

📈 26/35 patients were transferred from outside hospital: No difference in initial imaging, immediate complications, follow-up, or number of follow-ups between groups

🏠 13 patients transferred from ≥ 50 miles away: Immediate complications non-significantly greater when compared to those transferred from < 50 miles away (risk difference: 0.3, $p=0.16$).

CONCLUSIONS

👨‍⚕️ Immediate complications may be increased in patients transferred from ≥ 50 miles away compared to < 50 miles

🔍 Future, larger studies needed to establish standardized management protocols

KEY POINTS

Protocol challenges may arise in pediatric patients with kidney injury requiring transport that may affect clinical outcomes.

While **diagnostic imaging appears to be similar** between transferred and non-transferred patients, **immediate complications may be increased** in patients being transferred from hospitals ≥ 50 miles away.

Further studies are needed for generalizable results in order to establish standardized management protocols.

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RMUS Renal Trauma Sub-Study, 2022

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DATA & ANALYSIS

Table 1

| Variable Tested | | Not Transferred | Transferred | p-value |
|---|----|-----------------|-------------|---------|
| # Initial Diagnostic Renal Images Taken | 1 | 7 | 22 | 0.54 |
| | 2 | 2 | 4 | |
| # Repeat Images During Initial Diagnosis | 0 | 9 | 22 | 0.55 |
| | 1 | 0 | 4 | |
| # Immediate GU Complications | 0 | 9 | 20 | 0.30 |
| | 1+ | 0 | 6 | |
| Mean # Hours Between Injury and Tertiary Care Arrival | | 2.6 | 9.8 | 0.006* |
| Follow Up Visit with Urology? | N | 5 | 6 | 0.10 |
| | Y | 4 | 20 | |
| Mean # Follow Up Visits with Urology | | 1.3 | 1.9 | 0.31 |

Table 2

| Variable Tested | | <50 Mile Transfer | ≥ 50 Mile Transfer | p-value |
|---|----|-------------------|-------------------------|---------|
| # Immediate GU Complications | 0 | 12 | 8 | 0.16 |
| | 1+ | 1 | 5 | |
| # Long-Term Sequelae | 0 | 12 | 11 | >0.99 |
| | 1+ | 1 | 2 | |
| Mean # Hours Between Injury and Tertiary Care Arrival | | 9.6 | 10.0 | 0.09 |
| Follow Up Visit with Urology? | N | 3 | 3 | >0.99 |
| | Y | 10 | 10 | |
| Mean # Follow Up Visits with Urology | | 1.7 | 2.2 | 0.67 |

*Statistically Significant

DISCLOSURES

- No financial disclosures