Clinician Failure to Document Acute Kidney Injury in the Intensive Care Unit

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Background

Acute kidney injury (AKI) is a common syndrome in the intensive care unit and is associated with high mortality. Small changes in serum creatinine or urine output could be associated with devastating clinical consequences. Early diagnosis of AKI poses an opportunity for prophylactic or potential therapeutic intervention. However, the presence of AKI can go unnoticed. This retrospective analysis is aimed at evaluating the discordance in the presence of AKI by Acute Kidney Injury Network (AKIN) criteria and the documentation of this diagnosis by clinicians.

Methods

Patient records from January to March of 2010 were retrospectively evaluated for those admitted to medical and surgical ICUs with a Foley catheter. Exclusion criteria included those with known AKI or end-stage renal disease at ICU admission (Table 1). All included patients were reviewed by two independent investigators who ascertained the presence of AKI using the AKIN criteria; discordant cases were resolved by a nephrologist; this is considered the reference standard. (Figure 1) The inter-observer agreement between the two independent reviewers was excellent (k= 0.965; 95% confidence interval [CI] = 0.94 - 0.99). In this cohort of 483 patients the electronic medical records, including clinical notes, intake/output charts, and laboratory data were interrogated for first documentation of AKI. Both urine output criteria and creatinine criteria were used. Data was analyzed using chi-square goodness-of-fit test.

Results

• 193 (39.9%) patients had AKI by the reference standard
• 143 (29.6%) patients had AKI by clinician diagnosis (p<0.0001) (Figure 1)

AKI in medical, surgical, and mixed medical-surgical ICU’s
• reference standard AKI was 37.0%, 44.3%, and 38.1%
• Clinician diagnosis of AKI was 29%, 30.9%, and 28.6% respectively (p<0.0001) (Figure 2)

Conclusions

Clinicians were significantly less successful in documenting the presence of AKI in the medical records across Medical and Surgical ICU environments.

References


Table 1

<table>
<thead>
<tr>
<th>Demographics</th>
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<tbody>
<tr>
<td>Male</td>
<td>277 (56.1%)</td>
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<tr>
<td>Caucasians</td>
<td>413 (89%)</td>
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<tr>
<td>Age*</td>
<td>66 years (IQR 49-75)</td>
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<td>APACHE III score*</td>
<td>59 (IQR 47-72)</td>
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<tr>
<td>SOFA score *</td>
<td>4 (IQR 2-6)</td>
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*Expressed as Median (Interquartile range)

Figure 1

Total AKI for all ICU’s (*p<0.0001)

Figure 2

AKI by ICU Type (*p<0.0001)