PREDICTIVE VALUE OF CHRONIC KIDNEY DISEASE (CKD) IN ACUTE KIDNEY INJURY (AKI) PRESENTATION IN AN INTENSIVE CARE UNIT (ICU) OF A LOCAL HOSPITAL.


AIM and METHODS

To analyze the incidence of AKI, its severity according to KDIGO criteria and the variables associated with its presentation through a multivariate logistic regression model using AKI as a dependent variable, paying particular attention to previous history of chronic kidney disease (CKD)

SETTING

ICU of Reina Sofia Hospital, Tudela, Navarra, Spain, whose assistance is in charge of anesthesiology team. Reference population: 150000 inhabitants. Study population: all patients admitted to the unit for the years 2012, 2013 and 2014 for any reason.

RESULTS

•1115 patients admitted. Mean age 69.7 ± 15 years (range 18-102)
•Male gender 61.3%.
•738 patients (66.18 %) were admitted by medical cause and 337 (32.82 %) by surgical cause.
•953 patients (85.47 %) were admitted urgently and 162 (14.52 %) on a scheduled basis.
•Mean Charlson Comorbidity Index (CCI) was 6.2 ± 2.9.
•A total of 307 patients (27.53 %) had previous history of CKD:
  •141 category 3a
  •97 category 3b
  •53 category 4
  •16 category 5. This group was excluded for analysis.
•886 patients (43.6 %) had AKI during their stay in ICU:
  •Stage 1: 21.1% (235 patients)
  •Stage 2: 13.8% (154 patients)
  •Stage 3: 8.7% (97 patients)
•AKI etiology was attributed to acute tubular necrosis in most cases.
•A total of 35 patients (7.2% of all AKI cases) required hemodialysis.

![AKI-KDIGO stages according to KDIGO-GFR categories](image)

•Figure 1. Distribution of AKI-KDIGO stages according to GFR KDIGO-categories of CKD estimated by CKD-EPI formula from the baseline creatinine (mean of all measurements of serum creatinine in the 365-7 days prior to admission)

•Table 1. Variables associated with AKI presentation in ICU selected by the logistic regression model.

<table>
<thead>
<tr>
<th>Variable</th>
<th>OR</th>
<th>95% IC</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>CKD</td>
<td>5.99</td>
<td>4.58 to 8.18</td>
<td>0.000</td>
</tr>
<tr>
<td>Shock</td>
<td>4.70</td>
<td>3.34 to 6.61</td>
<td>0.000</td>
</tr>
<tr>
<td>Surgical vs medical cause</td>
<td>1.69</td>
<td>1.24 to 2.30</td>
<td>0.001</td>
</tr>
<tr>
<td>Male gender</td>
<td>1.37</td>
<td>1.02 to 1.85</td>
<td>0.038</td>
</tr>
<tr>
<td>CCI</td>
<td>1.17</td>
<td>1.09 to 1.26</td>
<td>0.000</td>
</tr>
</tbody>
</table>

CONCLUSIONS

• AKI incidence (43.6%) was high in our study. 7.2% of AKI patients required hemodialysis treatment.
• CKD prior history was the main predictor of AKI presentation. AKI risk were six-fold increased in CKD patients. This population has a special predisposition for this complication in ICU.
• The incidence was particularly high in patients with CKD categories 3b and 4.
• Preventive measures should be implemented in patients admitted to an ICU with this background (CKD) as well as paying attention to other variables selected by the logistic regression model.

REFERENCES


