Background:
- Efficacy of vancomycin in critical ill patients is high related with adequate vancomycin blood levels, so a vancomycin protocol has been developed between Pharmacy and ICU to achieve this goal. This protocol has been based on vancomycin levels 15-25 μg/ml, next day of the beginning of the protocol.

Objectives:
- Assess if the protocol achieves adequate vancomycin blood levels the next day of the beginning of the loading dose.
- Propose any measure to improve the protocol.

Methods:
-Prospective study from January 1 to May 31, 2017, of every patient with vancomycin prescribed in ICU unit. The patients included were separated by groups in different categories (gender, age, weight, BMI, CrCl, and pathology). Subsequently, next day level was analyzed, and whether is between therapeutic range (TR) (15-25 μg/ml) or not. Statistical significance was considered with p<0.10. The protocol is as follows:

<table>
<thead>
<tr>
<th>Weight (Kg)</th>
<th>Loading dose (mg)</th>
<th>Administration time (min)</th>
<th>CrCl (ml/min)</th>
<th>Dose (mg)/24h</th>
</tr>
</thead>
<tbody>
<tr>
<td>40-50</td>
<td>750</td>
<td>60</td>
<td>&gt;80</td>
<td>2000 mg</td>
</tr>
<tr>
<td>51-80</td>
<td>1000</td>
<td>60</td>
<td>79-50</td>
<td>1500 mg</td>
</tr>
<tr>
<td>81-100</td>
<td>1250</td>
<td>90-120</td>
<td>49-30</td>
<td>1000 mg</td>
</tr>
<tr>
<td>&gt;100</td>
<td>1500</td>
<td>90-120</td>
<td>&lt;29</td>
<td>500 mg</td>
</tr>
</tbody>
</table>

Results:
- N = 31 patients (4 excluded).
- Age (median) = 52 years [43-67]
- Gender = 59% males.
- CrCl (median)= 98ml/min (76-130)
- 2 patients had CrCl between 30-50ml/min and none below 30ml/min.

Significant differences have been found in the categories of gender (p = 0.012) and CrCl (p = 0.09) through a one-way ANOVA. In 75.0% of men, level found was below 15μg/ml, in comparison to 27.3% in women. Patients with CrCl >80 ml/min, 65.0% had a level below 15μg/ml compared to 28.6% in the other groups.

Conclusions:
1.- Due to the results found men and patients with normal creatinine clearance are underdosed.
2.- The recommendations to improve the protocol are to increase the dose of continuous perfusion in men and patients with CrCl >80 ml/min.