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EARLY LEVELS OF VANCOMYCIN IN INTENSIVE CARE UNIT (ICU) PROTOCOL DEPENDING ON ICU PATIENTS' CHARACTERISTICS

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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:

Weight (Kg)	**Loading dose (mg)**	**Administration time (min)**
40-50	750	60
51-80	1000	60
81-100	1250	90-120
>100	1500	90-120

CrCl (ml/min)	Dose (mg)/24h
>80	2000 mg
79-50	1500 mg
49-30	1000 mg
<29	500 mg

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..

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