

Category : **Respiratory: mechanical ventilation**

A201 - The burden of ventilator-associated pneumonia and its impact in hospital resources in icu patients: a national, multicenter, retrospective study (evap-pt study)

J Duarte¹ ; P Mergulhao² ; J Gonçalves Pereira³ ; L Pássaro¹ ; F Froes⁴

¹MSD Portugal, Medical Affairs, Paço de Arcos, Portugal, ²Hospital Lusíadas, Intensive Medicine, Hospital Lusíadas, Porto, Portugal, ³Hospital Vila Franca de Xira, Intensive Medicine, Hospital Vila Franca de Xira, Vila Franca de Xira, Portugal, ⁴entro Hospitalar Universitário Lisboa Norte, Hospital Pulido Valente, Lisboa, Portugal

Introduction:

This study aims to evaluate the impact of Ventilator-acquired pneumonias(VAP) on the patient and healthcare system in Portuguese ICUs. VAP is associated to increased patients' length of stay(LOS), as well as prolonged periods of mechanical ventilation(MV), responsible for a fraction of antibiotic prescriptions. This study compared demographic characteristics of MV patients who developed VAP versus patients who did not.

Methods:

This study included adult subjects, admitted to ICU for any reason between July 1, 2016 and December 31, 2017. Only subjects who started MV for at least 48 hours during their ICU admission were included. VAP patients and MV patients who did not develop VAP(MVnon-VAP) were identified retrospectively and randomly included in a 1:1ratio. Demographic information, VAP-related characteristics, and baseline severity scores were captured from medical records.

Results:

197VAP patients and 197MVnon-VAP patients were included. A larger number of patients(46.7%) in the MV non-VAP group were aged 70 years or older, $p=0.021$. The main reasons for ICU admission were different between groups. Differences were also observed in severity scores between VAP and non VAP patients (SAPSII, $p=0.048$)(Figure1).

On healthcare resource utilization, statistical differences($p<0.001$) were observed between VAP vs MVNon-VAP patients in hospital (61 vs 35.9 days, respectively) and ICU LOS (27.5 vs 11 days, respectively). Also, MV duration was always higher for VAP patients (20.7 vs 8 days, respectively, $p<0.001$).

Conclusion:

Among MV patients, VAP group experienced more hospitalizations and longer LOS, supporting a large healthcare resource utilization required by VAP which might lead to higher admission costs. Several limitations must be considered in this retrospective study including the different criteria associated to VAP diagnosis in each center. Nevertheless, these data reinforce the importance of characterizing adequately hospital infections, for an improved management and optimize health resources.

Image :

Table 1		Ventilated ICU patients who		
		Developed VAP (n=197)	Did not develop VAP (n=197)	p-value*
Age %, (n)	>70 years	34% (67)	46.7.0% (92)	0.021
Sex %, (n)	Male	79.2% (156)	56.9% (112)	<0.001
ICU admission type	Trauma	24.4% (48)	13.2% (26)	<0.001
	Surgical	13.2% (26)	39.6% (78)	<0.001
	Medical	37.0% (73)	28.9% (57)	<0.001
	Neurocritical	25.4% (50)	18.3% (36)	<0.001
SOFA score (maximum 48h before VAP diagnosis) mean (SD);		8.2 (3.4) (n=197)	8.5 (3.7) (n=195)	0.392
SAPS II score at ICU admission mean (SD);		50.3 (15.9) (n=197)	53.6 (17.1) (n=196)	0.048

* The comparison of two independent samples in respect to quantitative variables was performed with the t-test for independent samples or the Mann-Whitney non-parametric test, according to the assumption validations of the statistical test. The comparison of two independent samples in respect to qualitative variables was performed with the Chi-square test or Fisher's exact test, according to the assumption validations of the statistical test. Statistical comparisons were performed for a significance level of 0.05. p-values less than 0.001 were reported as "<0.001". Medical condition stands for any condition leading to ICU admission, excluding trauma, surgical and neurocritical conditions.