European Respiratory Society
Annual Congress 2013

Abstract Number: 5228

Publication Number: P2481

Abstract Group: 2.2. Noninvasive Ventilatory Support

Keyword 1: Ventilation/NIV **Keyword 2:** Pneumonia **Keyword 3:** No keyword

Title: Non-invasive ventilation for respiratory failure in pneumonia- Outcomes in a university teaching hospital

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Body: Respiratory failure in pneumonia is conventionally treated with invasive mechanical ventilation(MV). Non-invasive ventilation(NIV) has been shown to reduce intubation rates, length of stay(LOS) and improve survival rates in the Intensive Care Units[1,2]. We analysed the University Hospital Aintree Critical Care database retrospectively from January 2009 – July 2012 for all patients requiring ventilatory support for respiratory failure due to pneumonia. Data was recorded on mode of ventilation[NIV, Continuous Positive Airway Pressure (CPAP) & Bi-level Positive Airway Pressure (BiPAP) and MV], APACHE 2 score, mortality and LOS on the unit in all cases. Results - 398 patients satisfied the inclusion criteria. There were 233 males and 165 females. Mean age-63.5 years (Range-18 to 92 years). Results are presented in table 1.

Table 1

Ventilation Mode	Outcome	Number of patients	APACHE2 score Mean+SD	LOS(days)
MV	Dead	83	22.7 ± 5.8	
	Alive	64	17.7 ± 5.6	8.1 ± 5.9
CPAP	Dead	29	22.1 ± 5.2	
	Alive	69	16.9 ± 6	5.5 ± 2.7
BiPAP	Dead	16	25.7 ± 5.3	
	Alive	26	17.5 ± 4.5	3.5 ± 1.4
NIV trial then MV	Dead	23	21.1 ± 5.6	
	Alive	88	18.9 ± 5.8	14.1 ± 8.1

Conclusion- Survival within the group that received MV was 44%, NIV-68%, NIV trial then MV- 79% and

significantly greater in those who received NIV($p<0.05$). More controlled studies are needed to identify the criteria for patient selection and risks of failure. References: 1. Non Invasive Mechanical Ventilation in pneumonia. Katerina Markopoulou. Pneumon. 2009; 22(Suppl 2):62-63 2. Non-invasive ventilation in community-acquired pneumonia and severe acute respiratory failure. Carrillo A, Gonzalez-Diaz G, Ferrer M,et al.Intensive Care Med. 2012 Mar;38(3):458-66.