

Bronchiolitis: A Comparative Analysis of High Dependency Unit (HDU)



Admissions and Ward Admissions

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Background

Our tertiary paediatric centre has approximately 8300 admissions a year. Bronchiolitis is a common illness requiring admission but only 10% require high dependency care (HDU). Is there a difference between those patients requiring HDU and those who do not?

Aim

To complete a retrospective comparative case analysis comparing demographics and features of illness between the two groups to determine any relationships to HDU admission.

HDU vs WARD

Methods

All bronchiolitis admissions (n=509) from September 2016 to April 2017 were identified in patients up to 14 months of age.

- There were 53 admissions to HDU.
- Forty nine had complete electronic clinical records available to review.
- Fifty admissions receiving ward level care were randomly selected for comparison.

Statistical analysis was completed using descriptive statistics, the Independent T test and Pearson's Chi Squared.

Results

Table one shows the results of the comparative analysis.

PATIENT CHARACTERISTICS			TABLE 1
Demographics	HDU patients n=49	Ward patients N=50	P value
Median Decimal Age	0.74	0.48	
Sex Male	34	31	0.439
Female	15	19	
Neonatal History			
Birth Gestation range	25 weeks - Term	27 weeks - term	
Number born preterm	19	11	0.069
Antibiotics in neonatal period	6	7	

COMORBIDITIES		TABLE 2	
	HDU patients n=49	Ward patients N=50	P value
Cardiac	10	2	0.012
Neuromuscular	10	4	0.076
Chronic lung disease	3	3	0.98
Home oxygen	3	5	0.63
Previous intubation	7	5	0.514
ILLNESS CHARACTERISTICS			
Days of coryza on admission (mean)	2.49	4.24	<0.001
Days of increase work of breathing (mean)	1.18	1.4	0.194
In oxygen (O ₂)	43	22	<0.001
PEWS Score (0 – 3)	On admission to HDU	On admission to ward	
HR mean	0.76	1.06	0.183
RR mean	0.76	0.44	0.027

Key results:

- A significantly greater number of patients with a cardiac abnormality required admission to HDU.
- Admission to hospital earlier (days of coryza), higher respiratory rate and the need for oxygen were statistically significantly related to HDU admission.
- There was no viral aetiology that related to HDU admission when compared with the ward cohort.
- The mean length of hospital stay was 7.82 days in the HDU group compared to 2.92 in the ward group (p=< 0.001)

Conclusion

The only comorbidity identified that was related to HDU admission was a cardiac abnormality. There was no statistical relationship with prematurity, chronic lung disease, home oxygen or neuromuscular conditions identified.

Earlier admission in illness, higher respiratory rate and oxygen requirement could all be used as surrogate markers for disease severity and were more prominent in the HDU group.