Discussion

The current study found that the application of VAP prevention bundle did not significantly decrease the rate of VAP. Literature of examining bundle effectiveness in PICU is limited. Bigham et al caught sight of VAP prevention bundle effectiveness as VAP incidence rate significantly from 5.6 to 0.3 VAP per 1 K MV (p<0.0001). (24) On an international, multi–PICUs participation level, Rosenthal et al also found that application of VAP prevention bundle has decrease rate from 4.8% to 2.6% with incidence intensities being 11.7 and 8.1 VAP per 1 K MV (p=0.0286). (26) On the contrary, yet like our study, Pena-Lopez et al revealed an insignificant difference of VAP rate pre- (4.14 per 1 L MVD) and post- (2.68 and 1.05 per 1 K MV) VAP prevention bundle (p=0.088). (27)

Conclusions

This study’s findings question the importance of VAP prevention bundle application to decrease VAP rate and call for more prospective, multi-center studies examining the bundle’s effectiveness. High PEEP, high fever > 38°C and high WBCs were found to be significant indicators of VAP. The various diagnostic criteria of VAP and whether the VAP prevention bundle was applied with high compliance or not might compete in spot of the different reported incidence rates; the heterogeneous components of the applied bundle could play a role too.

Methods and Materials

Methods: This is a single-center, cohort study that took place at the PICU of KAMC- Jeddah from March 2015 up to March 2018. This study reveals the study design. The VAP prevention bundle followed in this study was a combination of evidence-based bundles from the medical literature. Table 1 illustrates the VAP bundle developed for this study with corresponding references. VAP was diagnosed based on a modified combination of both Centre of Disease Control and Prevention (CDC) (2013 (sensitivity=37%, Specificity=100%) and Johnsonbrothers (sensitivity=69%, Specificity=75%) (4, 12, 16).

Results

The study included 141 children aged 1 to 144 months, 98 were included from the pre-bundle group and 36 from the bundle group. Antibiotics usage in the groups was above 60%. The compliance of the VAP bundle in this study was 60% in the first 6 months and 80% in the latter 6. Table 3 displays the comparison of patients who developed VAP and those who did not, all together regardless of bundle application, in the interest of recognizing which variable could predict subjects that are prone to develop VAP; the overall VAP events rate was 34%.

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References

You can access the references here. For more information, please refer to the original text.