SOUTHERN ILLINOIS UNIVERSITY EDWARDSVILLE

The Impact of MRSA Nasal PCR Testing and Vancomycin Usage

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BACKGROUND

- Vancomycin, a glycopeptide antibiotic, is commonly used in acute care settings to empirically treat respiratory infections like pneumonia, bronchitis, and COPD exacerbations.
- MRSA nasal PCR swab involves collecting a sample from the nares to detect for MRSA colonization.
- MRSA PCR can be used to remove unnecessary vancomycin therapy in patients with respiratory infection indications if MRSA is not detected.

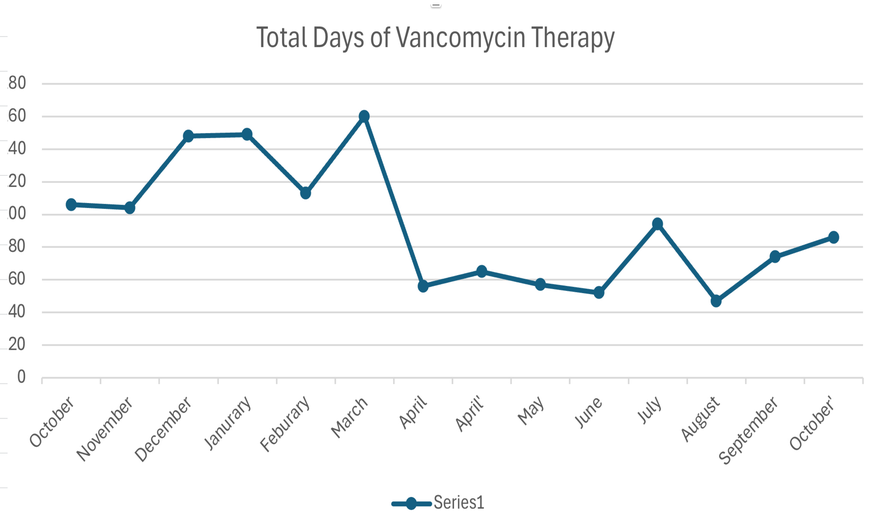
METHODS

- A retrospective, single-center, pre-policy and post-policy study was conducted at Hannibal Regional Hospital in Hannibal, Missouri
- The collected data from October 1st, 2022 to October 31st, 2023. Hannibal Regional Hospital implemented a policy allowing pharmacists to order MRSA nasal PCR tests to patients who were prescribed vancomycin for a respiratory indication, including indications such as pneumonia (community-acquired and non-community acquired), COPD exacerbations, and bronchitis.
- Hannibal Regional Hospital's MRSA nasal PCR testing policy for vancomycin therapy was enacted on April 12th, 2023. Pre-policy data was collected from October 1st, 2022 to April 11th, 2023. Post-policy data was collected from April 12th, 2023 to October 31st, 2023.
- The number of MRSA nasal PCR tests was also noted through running a computer analysis of MRSA nasal PCR tests ordered.

RESULTS

- Once the policy was enacted, there were 323 MRSA nasal PCR tests given from May 2023 through October of 2023.
- The table and chart below show the days of vancomycin therapy of each month, pre-policy and post-policy.
- It is hypothesized that some of the higher total days of vancomycin therapy was due to the newness of the policy and building the foundation for adherence to the policy.
- This shows that the use of MRSA nasal PCR testing does overall reduce the days of vancomycin therapy.
- With this, there is a significant cost savings due to decreasing the amount of vancomycin that needs compounded, pharmacokinetic monitoring, laboratory testing, and other factors as well.
- While we would like to find an estimated cost savings related to the decreased days of therapy with the policy enacted, it is impossible using the method we chose by not looking into patient profiles, finding their dosing regimen, and other factors.

Total Days of Vancomycin Therapy	
October	106
November	104
December	148
Janurary	149
Feburary	113
March	160
April	56
April'	65
May	57
June	52
July	94
August	47
September	74
October'	86



CONCLUSION

- Overall, there was a great decrease in the days of vancomycin therapy in the post-policy group.
- Differences in the data could be due to differences in the seasons that were studied, such as looking at all of pre-policy influenza season but not collecting all of post-policy influenza season.
- Post-policy vancomycin days of therapy can be elevated and not truly reflective of the policy's effectiveness due to several factors:
  - Acuity of the patients
  - Potential issues with providers deciding to continue vancomycin therapy in even patients not on the intensive care unit for respiratory infection indications even when their MRSA nasal PCR results in a negative
  - Some vancomycin orders were listed with a couple indications, such as pneumonia/sepsis and pneumonia/bacteremia
- Average days of vancomycin therapy pre-policy was 120, while the post-policy average days of vancomycin therapy was 68.

References

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