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39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

Rawan T Tafish, J Spine Neurosurg 2023,
ISSN: 2325-9701 | Volume: 12

8th World Congress on

SPINE AND SPINAL DISORDERS

June 12, 2023 | Webinar

Received date: 17.05.2023 | Accepted date: 23.05.2023 | Published date: 30.06.2023

Effectiveness of Topical Vancomycin in the prevention of Spinal Surgical Site Infections: a retrospective cohort study

Rawan T Tafish
Kingdom Hospital and Consulting Clinics, Kingdom of Saudi Arabia

Background: The risk of surgical site infections (SSIs), particularly methicillin-resistant staphylococcus aureus (MRSA) SSIs, post spinal surgeries is one of the most daunting experiences to patients and surgeons. In some practices, vancomycin powder is applied directly on the wound before skin closure to minimize the risk of SSIs; however, this practice is not supported by well-established evidence. Our study sought to assess the effectiveness of topical intra-wound vancomycin in minimizing the risk of SSIs in patients who underwent spinal surgeries at a private Saudi hospital.

Methods: A retrospective cohort study was conducted using the hospital database. Patients who underwent spinal surgeries from the period of 09/2013 to 09/2019 were included and followed up to 30 days (surgeries without implantation) or 90 days (with implantation). The odds ratio (OR) of the first SSI observed in the follow-up period between vancomycin users vs. non-users was estimated using logistic regression adjusting for the measured confounders. A sensitivity analysis was conducted using a propensity score analysis.

Results: We included 81 vancomycin users vs. 375 non-users with 28 infections. The adjusted OR of SSIs between the two groups was 0.40 (95% confidence interval [CI] 0.11 to 1.34). The result of the propensity score analysis was consistent (OR: 0.97 [95% CI 0.35 to 2.68]).

Conclusion: We could not find a lower association of SSIs with intra-wound vancomycin in patients who underwent spinal surgeries. Conducting larger multicenter studies would add more emphasis to findings of this study

Recent publications

1. Althunian, Turki Abdulaziz et al. “Recording type 2 diabetes mellitus in a standardised central Saudi database: a retrospective validation study.” BMJ open vol. 13,3 e065468. 21 Mar. 2023, doi:10.1136/bmjopen-2022-065468
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3. Cannon, John G D et al. “Topical vancomycin for surgical prophylaxis in non-instrumented pediatric spinal surgeries.” Child's nervous system: ChNS: official journal of the International Society for Pediatric Neurosurgery vol. 35,1 (2019): 107-111. doi:10.1007/s00381-018-3881-z.

Biography

Rawan T Tafish was graduated from Beirut Arab University (Lebanon) first with the Bachelor in Pharmacy degree in 2012 then she joined the Doctor of Pharmacy (Pharm D post-graduate degree) and graduated in 2014 after fulfilling the requirements in hospital rotations and submission of the thesis project. She has first started her career in Kingdom Hospital in 2015, and then she decided to join a distance learning program in Notting Hill College (UK) from which she obtained the Clinical Pharmacy Diploma in 2019. Rawan T Tafish then joined Specialized Medical Center SMC in 2022, and she is currently working as a full-time clinical pharmacist/researcher. She has become an American Board certified in Critical Care during the year 2022, and continuously aiming for a career in the field of Pharmacy or Clinical Research and Health Care to gain experience and develop the skills that she has gained from my studies, training, and work.

rawan_tafish@hotmail.com