



# Letter to the editor regarding: Intrawound application of vancomycin changes the responsible germ in elective spine surgery without significant effect on the rate of infection: a randomized prospective study

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Dear Editor,

With great interest, we read the article of Mirzashahi et al. [1], who investigated whether intrawound vancomycin powder can successfully prevent surgical site infections (SSIs) in spinal surgery. We commend the authors for performing a large randomized controlled trial (RCT) in a field in which most data comes from retrospective studies. The authors found no significant effect of intrawound vancomycin treatment, with deep SSIs occurring in 2.7% of control patients versus 5.2% in patients receiving intrawound vancomycin. However, we believe that a deviation in vancomycin usage may have led to this absence of an effect.

In the Methods section, the authors report that vancomycin was: “...applied locally after closure of the fascia and before the final skin closure.” When used in this manner, the vancomycin powder will remain only in the subcutaneous tissues and will not (adequately) penetrate into the dead space/hematoma surrounding the instrumentation and bone graft. Since it is believed that SSIs occur through perioperative contamination and subsequent proliferation of micro-organisms in this dead space, this method of superficial vancomycin usage most likely failed to decontaminate the entire wound. The data the authors present support this hypothesis, as all infections were deep SSIs and no superficial SSIs (defined as an SSI above the muscular fascia) were reported in any of the patients.

Interestingly, the observations of the current study are in accordance with the only other RCT that investigated intrawound vancomycin in spine surgery which is often cited

as evidence that intrawound vancomycin is not effective in preventing SSI [2]. In that study, vancomycin was also not applied to the entirety of the deep wound.

The vast majority of cohort studies do apply vancomycin in the deep layers and indicate an impressive effect, with a three- to fourfold reduction in deep SSIs when using vancomycin compared to controls [3, 4]. We therefore suggest spine surgeons to remain critical of both retrospective and prospective studies on these intrawound treatments since small alterations in methods between studies may erroneously fuel the suggestion that these interventions are not effective, while in fact they most likely are.

## Compliance with ethical standards

**Conflict of interest** Justin Lemans declares that he has no conflict of interest. Sander Muijs declares that he has no conflict of interest. Moyo Kruyt declares that he has no conflict of interest.

**Ethical approval** This article does not contain any studies with human participants performed by any of the authors.

## References

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