

Study finds antiseptics agents interchangeable in reducing infection risk in open fracture surgeries

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Orthopaedics faculty at LSU Health New Orleans participated in a study comparing two antiseptics aqueous solutions in reducing the risk of

infection in patients requiring surgery for open fractures. In the largest known randomized-controlled trial, the research team found that contrary to current international recommendations, chlorhexidine gluconate was not superior to povidone-iodine in an alcohol or aqueous solution in preventing surgical site infection.

The results suggesting health care practitioners can select either aqueous-based antiseptic solution when treating open fractures on the basis of solution availability, patient contraindications, or product cost are published in *The Lancet*.

Robert Zura, MD, Professor and Head of Orthopaedics, and Jessica Rivera, MD, Ph.D., Associate Professor of Orthopaedics, at LSU Health New Orleans School of Medicine, are also co-authors on the paper.

"I am proud of Dr. Rivera's and LSU Health New Orleans' contributions to this landmark study published in such a prestigious journal," says Dr. Zura.

The authors highlight WHO estimates of millions of patients worldwide each year who have surgical site infections. The inherent risk of using fracture fixation in a contaminated or dirty wound is realized in about 10% of open fractures developing surgical site infections. Orthopaedic surgical procedures have the highest infection rate, greater than 20% for severe open tibia shaft fractures.

Previous reviews of general surgery, obstetrics and gynecology trials suggested the superiority of chlorhexidine over iodine. The Aqueous-*PREP* multiple-period, cluster-randomized, crossover trial included 14 hospitals in Canada, Spain and the United States and 1,638 adults who underwent surgery for an open extremity fracture.

It found that the odds of surgical site infection or unplanned fracture-

related reoperations did not differ between patients assigned to receive skin antiseptics with aqueous 10% povidone or aqueous 4% [chlorhexidine gluconate](#). The authors wrote that their "findings contrast the superiority of chlorhexidine in alcohol that has been shown in clean or clean-contaminated surgery."

The authors note their findings could have particular relevance to low- and middle-income countries, where both antiseptic solutions might not be readily available or procuring both products is unnecessarily costly.

They conclude that their "findings are not only relevant to the management of [open fractures](#) but might also be applicable to the surgical treatment of other traumatic wounds."

More information: Aqueous skin antiseptics before surgical fixation of open fractures (Aqueous-PREP): a multiple-period, cluster-randomised, crossover trial, *The Lancet* (2022). [DOI: 10.1016/S0140-6736\(22\)01652-X](#)

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