

Note: Joseph Bernstein, MD, a member of the Editorial Board of Clinical Orthopaedics and Related Research, provided the following prompts for (and responses from) ChatGPT.

TASK 1. WRITE AN INTRO TO AN ORTHO STUDY. [I GAVE THE TASK – ABX CEMENT, REGISTRY STUDY, INFECTION].

please compose the 500 word introduction section to a paper worthy of the new england journal of medicine that explores whether adding antibiotics to the bone cement improves survivorship of hip replacements. the data will come the Swedish hip registry.

Introduction Hip replacements are a common surgical procedure, with over 400,000 performed annually in the United States alone. They are an effective treatment option for patients suffering from hip osteoarthritis, avascular necrosis, and other degenerative conditions. However, hip replacements are not without their complications. One of the most significant complications is periprosthetic joint infection (PJI), which is a serious and difficult-to-treat complication that can lead to revision surgery and a reduced lifespan of the implant.

PJI is caused by bacterial infection around the implant, and it is a leading cause of failure in hip replacements. The incidence of PJI is estimated to be between 1% and 2% of all hip replacements, with the majority of cases occurring within the first two years postoperatively. The current standard of care for preventing PJI is the use of prophylactic antibiotics administered prior to and following surgery. However, it is not clear whether the addition of antibiotics to the bone cement used during surgery would provide additional benefit in preventing PJI.

The Swedish Hip Arthroplasty Register (SHAR) is a national registry that includes data on all hip replacements performed in Sweden since 1969. The SHAR includes information on patient demographics, implant type, surgical technique, and postoperative complications. Using data from the SHAR, we aim to investigate whether the addition of antibiotics to the bone cement improves the survivorship of hip replacements in terms of reducing the incidence of PJI.

The primary objective of this study is to determine the effect of adding antibiotics to the bone cement on the incidence of PJI in hip replacements. The secondary objective is to identify any factors that may be associated with an increased risk of PJI, such as patient demographics, implant type, surgical technique, and comorbidities.

This study is important because it will provide valuable information on the effectiveness of adding antibiotics to the bone cement in preventing PJI, which can help guide clinical

practice and improve patient outcomes. Furthermore, the data from the SHAR is of high quality and includes a large number of patients, which increases the power and generalizability of the results. The results of this study could have a significant impact on the clinical management of hip replacements and lead to improvements in patient outcomes.

TASK 2. WRITE A LETTER TO THE EDITOR IN SUPPORT OF, AND WRITE ANOTHER LETTER TO THE EDITOR OPPOSING, A PUBLICATION

Article: *What Factors Are Associated With Delayed Wound Closure in Open Reduction and Internal Fixation of Adult Both-bone Forearm Fractures?*

Shu, Henry T. BS1; Yang, Victor B. BA1; Badin, Daniel MD1; Rogers, Davis L. MD1; Covell, Michael M. BA2; Osgood, Greg M. MD1; Shafiq, Babar MD, MSPT1

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I am writing to express my admiration and support for the recent study on delayed wound closure after open reduction and internal fixation (ORIF) of both-bone forearm fractures. The authors have expertly addressed a crucial and previously under-researched area in orthopaedic surgery, and their findings have the potential to greatly benefit both surgeons and patients alike.

The study's methodology is sound and thorough, with a large sample size and a well-defined patient population. The use of electronic medical records and CPT codes ensured a high level of accuracy and completeness in data collection. The results of the study are clear and compelling, with a 20% incidence of delayed wound closure and a strong association with male gender.

The study's conclusions are also noteworthy, as they highlight the importance of counseling patients about the possibility of delayed wound closure and paying particular attention to men with high-energy and open fractures. This is crucial information for surgeons to have in order to make informed decisions about surgical planning and patient care.

Furthermore, the authors have rightly called for further research in this area, as their study is not without limitations, and larger-scale studies are necessary to confirm the findings and explore the effects of delayed wound closure on fracture healing.

Overall, I believe that this study is a valuable contribution to the field of orthopaedic surgery and I wholeheartedly support its findings and recommendations.

and

I am writing to express my disappointment and frustration with the study that you recently published. The study's results are not only inconclusive, but also fail to take into account the most important factors that contribute to delayed wound closure.

First of all, the study's sample size is extremely small, with only 74 patients treated between January 2010 and April 2022. This makes it impossible to draw any meaningful conclusions from the data. Furthermore, the study's exclusion criteria are questionable, as patients with fractures that were fixed more than 2 weeks from injury, patients treated with intramedullary nailing, patients with compartment syndrome preoperatively, patients with Gustilo-Anderson Type IIB and C open fractures, and Monteggia and Galeazzi fractures

were not included. These exclusions limit the generalizability of the study, and make it impossible to determine the true incidence of delayed wound closure.

Additionally, the study's conclusion that being a man is independently associated with delayed wound closure is not only inaccurate but also offensive, as it suggests that men are more likely to have complications and it's a generalization without any scientific basis.

In conclusion, this study is a complete waste of time and resources and it should not be considered as a reliable source of information on delayed wound closure after ORIF