

P-25 (ABSTRACT #)

Super-oxidized water (Microcyn 60) for mesh hernioplasty in grossly contaminated fields. An experimental study.

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Purpose: To determinate the efficacy of super-oxidized water (SOW) instead of saline solution (SS) in order to disinfect grossly contaminated fields (GCF) before mesh implantation in rats.

Background: The use of mesh remains prohibited in such a case of grossly contaminated fields ($> 1 \times 10^7$ CFU/cm²). The SOW is a highly effective biocide against all kinds of bacteria without damage to eukaryote cells. Obtained by electrolysis of saline in the anodic chamber, it kills bacteria in just 60 sec. Nowadays we used it in such a cases of secondary peritonitis with excellent results.

We propose to use SOW for irrigation of soft tissues in such a case of GCF to reduce the number of bacteria and abscess formation compared to SS.

Method: Prospective and randomized study with two groups of rats, 30 for study and 30 for control, under general anesthesia we created a subcutaneous pocket inoculated with $> 1 \times 10^7$ E. coli bacteria, quantitative cultures were taken before and after the irrigation with SOW or SS, afterwards a 2X2 cm Vypro mesh was implanted and the animals were killed 7 days later and autopsied. The Mann-Whitney analysis was used for bacteria reduction and Chi² for abscess formation.

Results: During the anesthesia 6 rats died. Log reduction of bacteria for SS: 99.969% vs. SOW: 99.997% with a statistical significance difference ($p = < 0.001$). For abscess formation SS: 17/27 vs. SOW: 7/27, when comparing groups, odds ratio was 4.8 (95% confidence intervals 1.5-15.5), with $p = 0.01$.

Conclusions: Log reduction of bacteria In Vivo is by far better using SOW instead of SS. When compared with SS, SOW resulted in 380% less abscess formation in the study group, besides the amount of collection and degree of infection was minor for the SOW group. The use of Microcyn60 is encouraged in the case of hernia surgery in GCF...