3rd Meeting of the International Consensus Meeting
8-10 of May, 2025 Istanbul

Are Ultrasonic Debridement Devices Useful for Removal of Biofilm in Orthopedic Infections?

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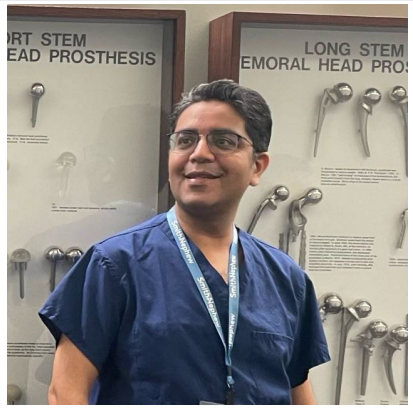

Ali Parsa ,USA

Goran Bicanic,UAE

Dan Schlatterer,USA

Antonio Spinarelli,Italy

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Kang-il Kim, South Korea

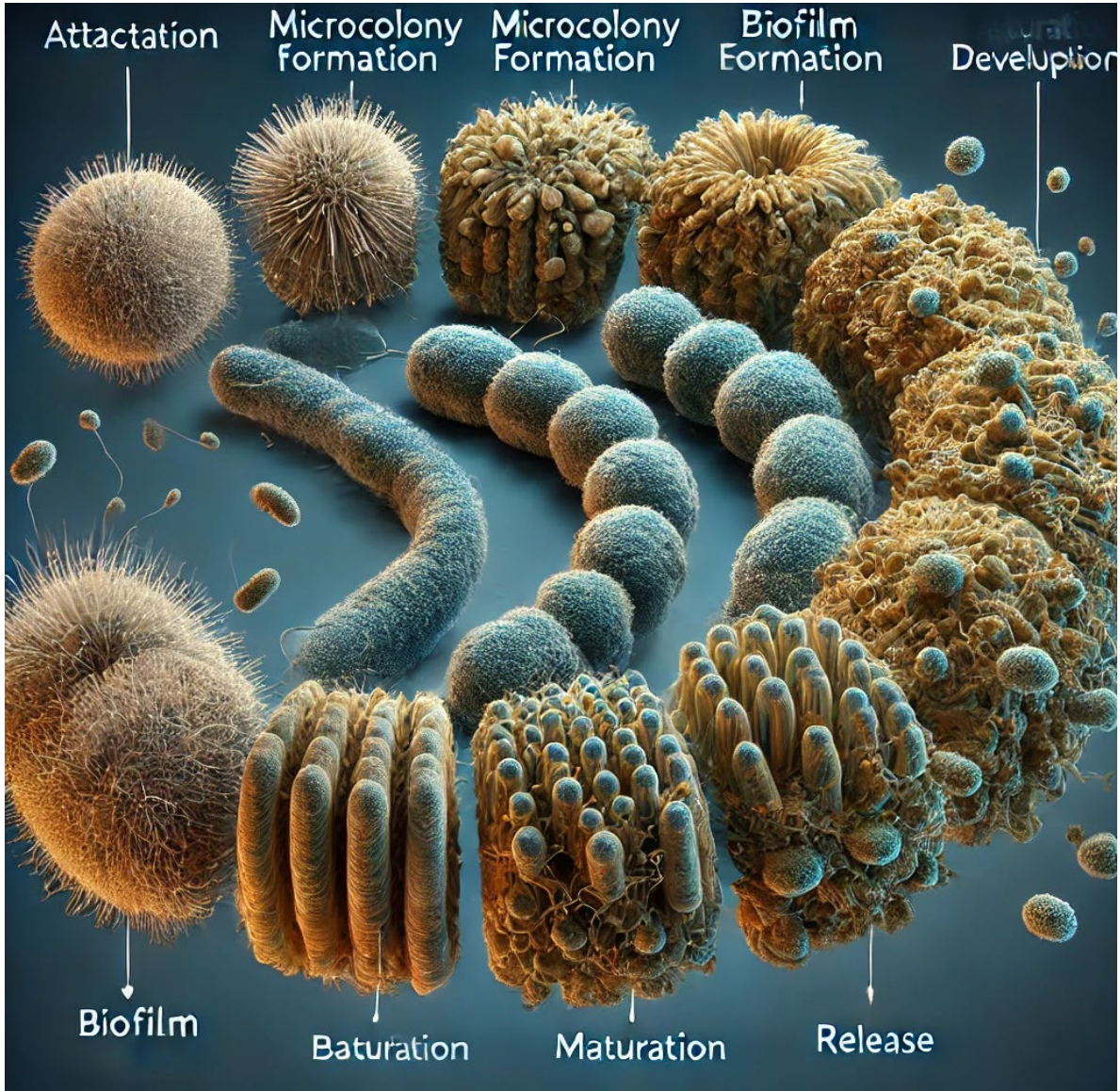
Chris Arts,Netherland

Lincoln Liow, Singapore

Javad Parvizi,USA

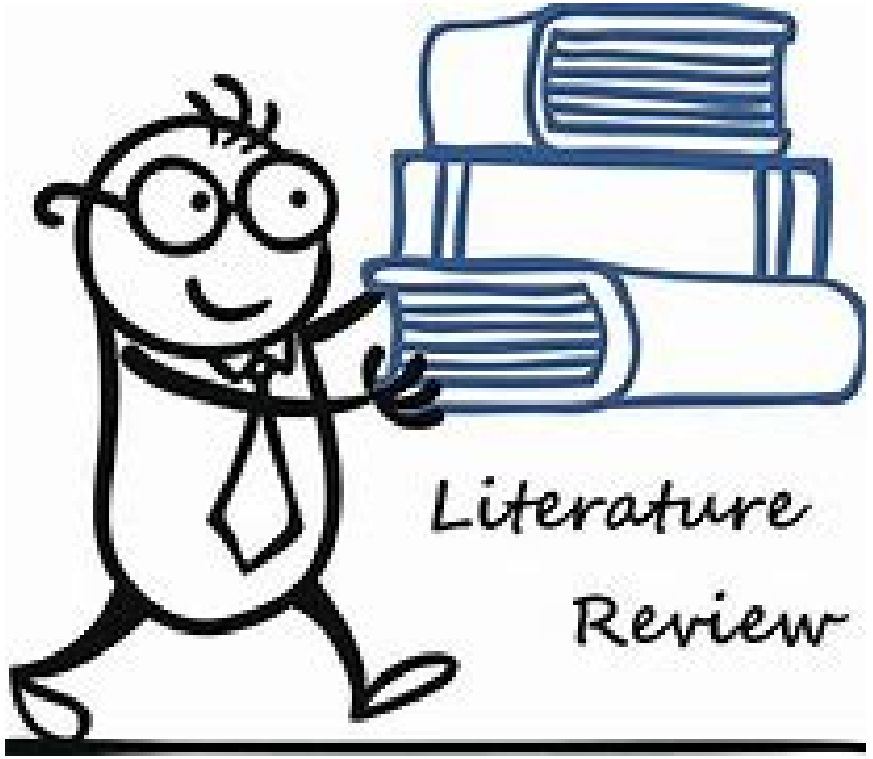
Why is this topic Important

- Biofilms are complex microbial communities that adhere to surfaces, exhibiting resistance to antibiotics and host immune responses.
- Ultrasonic debridement devices have emerged as a potential solution for disrupting biofilms.
- This systematic review synthesizes evidence to evaluate the utility of ultrasonic debridement devices in removing biofilm in orthopedic infections.



Literature Review/Process

- Number of articles retrieved: **192**
- Screening: **45**
- Final number of publications: **14**



Findings from Literature

Five out of fourteen studies (35.7%) were clinical studies, and the rest were in vitro. Most studies were in the field of Endodontics and plastic surgery and chronic wound management.

Although the results of clinical studies were limited, they showed that ultrasound debridement, when used in conjunction with conventional surgical techniques, increased the rates of infection clearance in chronic wounds and infections surrounding implants.

There is a gap between experimental and clinical studies; despite promising experimental results, clinical studies remain limited. Ultrasonic debridement has been shown in some studies to reduce surgical morbidity and preserve healthy tissue.

Conclusion:

Ultrasonic debridement devices show promise for managing chronic wound infection and biofilm-associated infections.

While preclinical evidence in dentistry is robust, clinical data is less conclusive specially for orthopedic implant this evidence is very limited but suggest potential benefits.

Question:

- Are Ultrasonic Debridement Devices Useful for Removal of Biofilm in Orthopedic Infections?

❖Response:

Ultrasonic debridement devices show promise for managing chronic wound infection and biofilm-associated infections. While preclinical evidence in dentistry is robust, clinical data is less conclusive specially for orthopedic implant these evidence are very limited but suggest potential benefits.

LEVEL OF EVIDENCE: Weak

❖**Vote:**

Agree n=36; 95%

Disagree 0

Abstain n=2; 5%