

ABSTRACT ID: 36

Poster(Non-Competing)

An Investigation Into The Synergistic Relationship Between Lactoferrin And Azithromycin With Particular Reference To Periodontopathic Bacteria

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Introduction: The development of treatment strategies for periodontitis that maximise the effectiveness of antibiotics is highly desirable. Azithromycin is proving to be an effective antibiotic for treatment of refractory periodontitis which works by binding to the outer membrane of Gram-negative bacteria and subsequently inhibits protein synthesis. Lactoferrin is a membrane-active host antimicrobial protein and so the objective of this study was to determine whether the effect of azithromycin (AZM) against example periodontopathogens (*Porphyromonas gingivalis* and *Tannerella forsythia*) could be potentiated by lactoferrin. **Materials and Methods:** Two strains of *P. gingivalis* and *T. forsythia* were exposed to lactoferrin (LF; up to 10 mg/ml) and AZM (up to 5 g/ml) for 0 -72 h. The MICs for AZM were established using E-Test strips and by agar diffusion. Susceptibility to LF and LF + AZM was evaluated using diffusion assays, with and without iron depletion. **Results:** The range of MIC values of AZM for *P. gingivalis* strains and *T. forsythia* was 0.16 - 0.63 µg/ml and 0.50 - 0.63 µg/ml, respectively. However, no inhibition was observed with iron saturated lactoferrin at any concentration or under iron depletion conditions nor was any effect observed on the AZM MIC by its presence. **Conclusion(s):** *P. gingivalis* and *T. forsythia* were inhibited by AZM but were not affected by LF and there was no synergism between AZM and LF.

KEYWORDS: minimal inhibitory concentration, lactoferrin, azithromycin, *porphyromonas gingivalis*, *tannerella forsythia*, ethylenediamine di-o-hydroxyphenylacetic acid