Bactericidal efficacy of hydrogen peroxide on Cutibacterium acnes

Hernandez, P.

Sager, B.

Fa, A.

Liang, T.

Lozano, C.

Khazzam, M.

The purpose of this study was to examine the bactericidal efficacy of hydrogen peroxide (H 2 o 2) on Cutibacterium acnes (C. acnes). We hypothesize that H 2 o 2 reduces the bacterial burden of C. acnes. Methods The effect of H 2 o 2 was assessed by testing bactericidal effect, time course analysis, growth inhibition, and minimum bactericidal concentration. To assess the bactericidal effect, bacteria were treated for 30 minutes with 0%, 1%, 3%, 4%, 6%, 8%, or 10% H 2 o 2 in saline or water and compared with 3% topical H 2 o 2 solution. For time course analysis, bacteria were treated with water or saline (controls), 3% H 2 o 2 in water, 3% H 2 o 2 in saline, or 3% topical solution for 5, 10, 15, 20, and 30 minutes. Results were analyzed with a two-way analysis of variance (AnoVA) ($p < 0.05$). Results Minimum inhibitory concentration of H 2 o 2 after 30 minutes is 1% for H 2 o 2 prepared in saline and water. The 3% topical solution was as effective when compared wi