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BACKGROUND: Tetracyclines and macrolide antibiotics have been in use for acne treatment for more than 20 years. Since 1992 increasing resistance to these antibiotics, and especially to erythromycin, is reported with Propionibacterium acnes. Zinc salts have demonstrated their efficacy in inflammatory acne treatment as well as their bacteriostatic activity against Propionibacterium acnes.

OBJECTIVE: The objective of our work was firstly to determine whether the clinical anti-inflammatory efficacy of zinc salts was altered in the presence of erythromycin resistant strains in vivo, and secondly to study the in vitro and in vivo effect of zinc on the sensitivity of Propionibacterium acnes strains to erythromycin.

METHODS: Thirty patients with inflammatory acne were treated by zinc gluconate with a daily dose of 30 mg for two months and bacteriologic samples were taken at D0, D30 and D60.

RESULTS: In vivo, this study displayed a reduction in the number of inflammatory lesions after a 2-month treatment whether or not Propionibacterium acnes carriage was present. Concurrently, in vitro addition of zinc salts in the culture media of Propionibacterium acnes reduced resistance of Propionibacterium acnes strains to erythromycin.

CONCLUSION: Thus, association of zinc salts via a systemic route and topical erythromycin treatment seems an interesting option in the light of an increasing number of patients carrying erythromycin resistant Propionibacterium acnes strains.

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