

CLINICAL EFFICACY OF COMPLEX TREATMENT WITH LICORICE (GLYCYRRHIZA GLABRA L.) ROOT INFUSION AND ITS EFFECT ON ORAL HEALTH-RELATED QUALITY OF LIFE IN DENTURE STOMATITIS

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Annotation: *The article compares the clinical efficacy of complex treatment with licorice root infusion and its effect on oral health-related quality of life (OHIP-14) with those of conventional treatment in 131 patients with denture stomatitis. Complex treatment reduced the overall clinical index by 61.6–67.2% and the OHIP-14 score by 53–62%.*

Keywords: *complex treatment, licorice, OHIP-14, quality of life.*

Introduction: There is still no uniform standard for the treatment of denture stomatitis [1], and conventional regimens based on antiseptics and synthetic antimycotics are limited by resistance, relapses and side effects. Glycyrrhetic acid from licorice root inhibits 11 β -hydroxysteroid dehydrogenase and exerts a corticosteroid-like anti-inflammatory effect, while licorice flavonoids have antioxidant and reparative properties [2,3]. Efficacy should also be assessed by patient-reported quality of life [4,5]. The aim of the study was to compare the clinical efficacy of complex treatment with licorice root infusion and its effect on oral health-related quality of life with those of conventional treatment in denture stomatitis.

Main part: A total of 131 patients aged 45–74 years were allocated to partial edentulism groups (1A, n=43 – conventional; 1B, n=48 – complex

treatment) and complete edentulism groups (2A, n=19 – conventional; 2B, n=21 – complex treatment). In complex treatment, freshly prepared infusion (1:10) was applied to the denture-bearing mucosa for 15 min twice daily for 7 days and the denture was soaked in it; keratoplastic agents were identical in both regimens. Before treatment and after 3 days, 7 days and 1 month, the overall clinical index (mean of six scored signs), pain (VAS), epithelial regeneration (%) and the OHIP-14 total score (0–56) were recorded; a $\geq 50\%$ reduction in the OHIP-14 score was regarded as clinically meaningful improvement.

Clinical signs decreased significantly in all four groups, but the effect of complex treatment began earlier and was more pronounced (Table 1). As early as day 3, oedema, Newton grade and pain decreased in group 1B, whereas in group 1A they remained unchanged or slightly increased ($p \leq 0.001$).

At 1 month, pain had decreased to a mild level (VAS ≤ 3) in 81.2% of patients in group 1B and in 55.8% in group 1A ($p=0.012$); in complete edentulism, 61.9% vs 36.8% ($p=0.205$; small groups). Signs of atrophy decreased with both methods (by 48–58% and 38–44%), and the between-group difference was not significant ($p=0.282$ and $p=0.632$); however, the increase in epithelial regeneration was almost twice as high with complex treatment. Improvement in quality of life correlated directly with the reduction of the clinical index ($\rho=0.436$) and pain ($\rho=0.500$; $p<0.001$). Because group 2B had a higher baseline OHIP-14 score (30.8 vs 24.8; $p=0.125$), the final score was the primary criterion in complete edentulism. No adverse effects were recorded during follow-up, consistent with reports that plant-based agents approach synthetic antimycotics in efficacy [6].

Table 1

Treatment outcomes (baseline → 1 month)

Indicator	1A	1B	2A	2B	p*
Clinical index reduction, %	34.9	61.6	27.9	67.2	<0.001 / <0.001
VAS, score	5.65→3.30	5.92→1.77	5.68→3.89	6.10→2.33	<0.001 / 0.018
Epithelial regeneration, %	38.7→56.6	38.0→69.1	32.7→45.5	36.3→64.7	<0.001 / <0.001
OHIP-14, score	27.3→19.4	28.6→13.5	24.8→18.1	30.8→11.8	<0.001 / 0.048
OHIP-14 reduced by ≥50%, % of patients	16.3	56.2	15.8	66.7	<0.001 / 0.002

Note: * – 1A↔1B / 2A↔2B at 1 month (Mann–Whitney U; Fisher's exact test).

The change (Δ) in OHIP-14 domains was significantly greater with complex treatment in all seven domains in partial edentulism and in six domains in complete edentulism (except “social disability”, $p=0.171$), i.e. the benefit extended to the psychological and functional state.

Conclusion: Complex treatment with licorice root infusion reduced the overall clinical index by 61.6–67.2% and pain by 62–70%, being significantly more effective than conventional treatment (27.9–34.9% and 32–42%); its effect becomes apparent as early as days 3–7 of treatment. Complex treatment reduced the OHIP-14 total score by 53–62% (27–29% with conventional treatment) and increased the proportion of patients with clinically meaningful improvement 3.5–4-fold. Inexpensive and safe licorice root infusion is recommended for clinical use in denture stomatitis; atrophic changes require longer follow-up.

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