Ўзбекистон Стоматологлар Ассоциацияси

ISSN 2091-5845

«Stomatologiya» - илмий-амалий журнал 1998 йилда асос солинган
Ўзбекистон матбуот ва ахборот агентлиги томонидан 15 август 2007 йилда қайта рўйхатга олинган.
Гувоҳнома № 0289.

STOMATOLOGIYA
№ 1, 2026 (102)

ИЛМИЙ-АМАЛИЙ ЖУРНАЛ

Ўзбекистон Республикаси Вазирлар Маҳкамаси ҳузуридаги Олий аттестация комиссияси (ОАК) қарорига асосан «Stomatologiya» журнали Фан доктори илмий даражасига талабгорларнинг диссертация ишлари илмий натижалари юзасидан илмий мақолалар эълон қилиниши лозим бўлган республика илмий журналлари рўйхатига киритилган (*ОАК Раёсатининг 2013 йил 30 декабрдаги 201/3-сон қарори билан тасдиқланган)*

ТАҲРИРИЯТ МАНЗИЛГОҲИ:
100048, Ўзбекистон Республикаси,
Тошкент ш., Махтумқули кўчаси, 103
тел.: +99871-236-26-75;
факс: +99871-230-47-58
Интернетдаги манзилгоҳи:
stomjurnal.tibbiyot.com.

Дизайнер ва компьютерда терувчи:
Е.Алексеев
Муҳаррир О.А.Козлова
Баҳоси келишилган нархда.

Рекламани чоп қилиш ҳақ тўлаш йўли билан амалга оширилади.
Реклама матнининг тўғрилиги бўйича жавобгарлик реклама берувчи зиммасидадир.
Қўлёзмалар, суратлар ва расмлар тақриз қилинмайди ҳамда эгасига қайтарилмайди.
Келтирувчи фактларнинг тўғрилиги, рақамли материалларнинг аниқлиги, препаратларнинг номлари, атамалар, илмий-адабий манбалар, исм ва фамилияларнинг тўғрилиги учун жавобгарлик муаллифларнинг ҳамда таҳририят ҳайъатининг зиммасидадир.

Содержание

Content

UDC: 616.314-002:616.33/.34

PATHOGENETIC APPROACH TO PERIODONTAL THERAPY IN PATIENTS WITH GASTROINTESTINAL PATHOLOGY USING NIGELLA SATIVA OIL AND LASER-VACUUM TREATMENT: A CONTROLLED CLINICAL STUDY


Kamilov H.P., Saidova M.A.

Periodontal diseases are among the most prevalent chronic inflammatory conditions affecting the oral cavity and remain a leading cause of tooth loss in adults worldwide. Chronic periodontitis is characterized by progressive destruction of periodontal tissues due to the complex interaction between pathogenic microorganisms and the host immune response [7,9].

Recent evidence suggests that periodontal inflammation is not only a localized oral condition but also closely linked to systemic health. Gastrointestinal tract (GIT) pathologies such as chronic gastritis, gastroduodenitis, and peptic ulcer disease are increasingly associated with periodontal disease [4,5,7]. These systemic disorders may contribute to altered immune responses, impaired microcirculation, increased oxidative stress, and chronic low-grade inflammation, all of which can aggravate periodontal destruction.

Conventional periodontal treatment primarily focuses on mechanical debridement through scaling and root planing, along with antiseptic and anti-inflammatory measures [3,10]. Although this approach reduces local inflammation, it does not fully address systemic factors influencing periodontal disease progression in patients with underlying GIT pathology.

Nigella sativa (black seed) oil has demonstrated anti-inflammatory, antimicrobial, antioxidant, and immunomodulatory properties in various biomedical studies [1,8].

Laser-vacuum therapy has emerged as a modern physiotherapeutic method aimed at improving microcirculation, reducing edema, and stimulating tissue regeneration [2,6].

Despite these advancements, clinical evidence on the combined use of Nigella sativa oil and laser-vacuum therapy in periodontal treatment for patients with GIT pathology remains limited. Therefore, this study was designed to evaluate the effectiveness of this integrated pathogenetic approach in improving periodontal health in such patients.

Material and methods

This was a controlled prospective clinical study aimed at evaluating a pathogenetically oriented periodontal treatment in patients with chronic periodontitis associated with gastrointestinal tract pathology. A total of 152 patients aged 40-80 years diagnosed with chronic periodontitis and concomitant GIT pathology were enrolled. Of these, 122 patients formed the main treatment cohort, and 30 patients comprised the control group. The gender distribution was 65.5% men and 34.5% women.

All patients were examined by both a periodontist and a gastroenterologist before inclusion.

Patient grouping

The main cohort (n=122) was divided into three groups based on periodontal severity and corresponding GIT pathology:

- Group 1 – Mild periodontitis (n=40): associated with mild chronic gastritis; treated with 1–2 sessions.
- Group 2 – Moderate periodontitis (n=42): associated with moderate GIT disorders; treated with 2-4 sessions.
- Group 3 – Severe periodontitis (n=40): associated with peptic ulcer disease or severe GIT pathology; treated with 3-10 sessions.

Control group (n=30): received only conventional periodontal therapy.

Treatment protocol

Conventional therapy (all groups):

- Professional oral hygiene
- Removal of dental plaque and calculus
- Scaling and root planing
- Antiseptic mouth rinses
- Individual oral hygiene instruction

Experimental treatment (Groups 1-3):

After professional cleaning:

- Topical application of Nigella sativa oil was applied directly to periodontal pockets using sterile cotton applicators.

- Laser-vacuum therapy was administered to enhance microcirculation, reduce inflammation, and stimulate tissue regeneration.

Clinical and laboratory assessments were conducted (Tabl. 1, 2).

Statistical analysis

Data were analyzed using appropriate statistical methods. Differences between groups before and after treatment were assessed using parametric or non-parametric tests. A p-value < 0.05 was considered statistically significant.

Results

Patients treated with Nigella sativa oil application combined with laser-vacuum therapy showed significantly greater clinical improvement compared with the control group.

Group 1 (mild periodontitis): marked reduction in gingival bleeding and pocket depth after 1-2 sessions.

Group 2 (moderate periodontitis): progressive improvement after 2-4 sessions.

Group 3 (severe periodontitis): significant clinical improvement after 3–10 sessions despite initially severe inflammation (Tabl. 1).

Table 1

Clinical periodontal indices before and after treatment

Parameter	Control, n=30	Group 1 – Mild, n=40	Group 2 – Moderate , =42	Group 3 – Severe, n=40
GBI (Bleeding index, %)	68 → 52	66 → 28	71 → 34	82 → 46
Pocket depth, mm	5.8 → 4.9	5.6 → 3.2	6.1 → 3.9	7.4 → 5.1
Clinical attachment level, mm	4.9 → 4.3	4.8 → 3.1	5.2 → 3.6	6.3 → 4.7
Gingival inflammation score	2.6 → 2.1	2.5 → 1.2	2.8 → 1.6	3.4 → 2.2

Note. Values presented as pre-treatment → post-treatment. All between-group differences significant at $p<0.05$.

Laboratory results demonstrated a significant reduction in pro-inflammatory cytokines (IL-1β, TNF-α, IL-6) in experimental groups compared to controls ($p<0.05$) (Tabl. 2).

Table 2

Laboratory markers before and after treatment

Marker	Control	Group 1	Group 2	Group 3
IL-1β, pg/ml	32 → 28	31 → 18	34 → 21	41 → 27
TNF-α, pg/ml	29 → 25	28 → 17	31 → 20	38 → 24
IL-6, pg/ml	27 → 23	26 → 15	29 → 18	35 → 22
C-reactive protein, mg/l	6.2 → 5.5	6.0 → 3.4	6.8 → 4.1	8.1 → 5.6

Note. Significant reductions in all experimental groups compared with control ($p<0.05$).

Microbiological analysis revealed decreased levels of major periodontal pathogens (Tabl. 3).

Table 3

Reduction of key periodontal pathogens after treatment, %

Pathogen	Control	Group 1	Group 2	Group 3
Porphyromonas gingivalis	18	52	47	38
Aggregatibacter actinomycetem comitans	15	49	44	35
Prevotella intermedia	20	55	50	41

Note. Reduction calculated as percentage decrease from baseline.

Discussion

This study demonstrates that integrating Nigella sativa oil application and laser-vacuum therapy with conventional periodontal treatment provides a more effective pathogenetic approach for managing periodontal inflammation in patients with GIT pathology.

The findings support the concept that periodontal disease in patients with gastrointestinal disorders is influenced not only by local factors but also by systemic inflammation and immune dysregulation. By addressing both components, the combined therapy achieved superior outcomes compared to standard treatment alone.

Nigella sativa oil likely contributed to reduced inflammation through its anti-inflammatory, antimicrobial, and antioxidant effects, consistent with previous studies.

Laser-vacuum therapy further enhanced therapeutic efficacy by improving blood circulation, reducing tissue edema, and promoting regeneration. Enhanced microcirculation may have facilitated deeper penetration of Nigella sativa oil into periodontal tissues.

The stratified treatment approach according to disease severity proved clinically meaningful. Mild cases responded rapidly, whereas severe cases required more sessions but still showed significant improvement.

Conclusion

1. The combination of conventional periodontal therapy with Nigella sativa oil application and laser-vacuum treatment is an effective pathogenetic strategy for managing periodontal inflammatory diseases in patients with gastrointestinal tract pathology.

2. This integrated approach significantly improves clinical periodontal outcomes and reduces systemic inflammatory burden.

References

1. Al-Attas S.A., Zahran F.M. Nigella sativa in oral health // Saudi Med. J. – 2016. – Vol. 37, №3. – P. 235-243.

2. Al-Zoubi I. Adjunctive laser therapy in periodontal treatment // Cureus. – 2023. – Vol. 15, №8. – P. e44268.

3. Feres M., Teles R. Periodontal microbiome and systemic inflammation // J. Dent. Res. – 2016. – Vol. 95, №9. – P. 1053-1062.

4. Hajishengallis G., Chavakis T. Mechanisms linking periodontal disease and inflammatory comorbidities // Nat. Rev. Immunol. – 2021. – Vol. 21. – P. 426-440.

5. Johnson R.B., Serio F.G. Gastrointestinal disease and periodontal disease associations // Periodontol 2000. – 2021. – Vol. 85, №1. – P. 123-131.

6. Kamilov Kh.P., Saidova M.A. Pathogenetic optimization of periodontal therapy in GIT pathology // Med. J. Uzbekistan. – 2025. – Vol. 2. – P. 245-255.

7. Linden G.J., Lyons A., Scannapieco F.A. Periodontal systemic associations // J. Clin .Periodontol. – 2018. – Vol. 45 (S20). – P. S8-S19.

8. Mekhemar M. et al. Nigella sativa and Thymoquinone: A Natural Blessing for Periodontal Therapy // Evid. Based Comp. Alternat. Med. – 2020.

9. Preshaw P.M., Bissett S.M. Periodontitis and systemic disease // Periodontol 2000. – 2019. – Vol. 79, №1. – P. 123-135.

10. Toker H., Ozdemir H. Role of cytokines in periodontal disease // J. Oral. Sci. – 2020. – Vol. 62, №2. – P. 133-140.

ПАТОГЕНЕТИЧЕСКИЙ ПОДХОД К ПАРОДОНТОЛОГИЧЕСКОМУ ЛЕЧЕНИЮ ПАЦИЕНТОВ С ЖЕЛУДОЧНО-КИШЕЧНЫМИ ПАТОЛОГИЯМИ С ИСПОЛЬЗОВАНИЕМ МАСЛА ЧЕРНОГО ТМИНА И ЛАЗЕРНО-ВАКУУМНОЙ ТЕРАПИИ: КОНТРОЛИРУЕМОЕ КЛИНИЧЕСКОЕ ИССЛЕДОВАНИЕ

Камилов Г.П., Саидова М.А.

Цель: оценка эффективности интегрированного патогенетического подхода у пациентов с желудочно-кишечными патологиями. **Материал и методы:** в исследование были включены 152 пациента в возрасте 40-80 лет с диагнозом хронический пародонтит и сопутствующей патологией ЖКТ. 122 пациента составили основную группу, 30 – контрольную группу. 65,5% составляли мужчин, 34,5% женщины. **Результаты:** полученные результаты указывают на то, что у пациентов с желудочно-кишечными расстройствами хронический пародонтит обусловлен не только местными факторами, но и системным воспалением и иммунной дисрегуляцией. Воздействуя на оба компонента, комбинированная терапия давала лучшие результаты, чем стандартное лечение. Лазерно-вакуумная терапия дополнительно повысила терапевтическую эффективность за счет улучшения кровообращения, уменьшения отека тканей и стимуляции регенерации. **Выводы:** стратифицированный подход к лечению в зависимости от тяжести заболевания оказался

клинически значимым: легкие случаи быстро поддавались лечению, тогда как тяжелые случаи требовали больше сеансов.

Ключевые слова: пародонтит, патология желудочно-кишечного тракта, Nigella sativa, лазерно-вакуумная терапия, воспаление, цитокин, лечение заболеваний пародонта.

QORA ZIRA YOG'I VA LAZER-VAKUUM TERAPIYASI YORDAMIDA OSHQOZON-ICHAK PATOLOGIYALARI BO'LGAN BEMORLARNI PERIODONTAL DAVOLASHDA PATOGENETIK YONDASHUV: NAZORAT OSTIDAGI KLINIK SINOV

Komilov G.P., Saidova M.A.

Maqsad: oshqozon-ichak patologiyalari bo'lgan bemorlarda integratsiyalashgan patogenetik yondashuvning samaradorligini baholash. **Material va usullar:** tadqiqotda 40-80 yoshdagi surunkali periodontit va unga hamroh bo'lgan oshqozon-ichak patologiyasi tashxisi qo'yilgan 152 bemor ishtirok etdi. Tadqiqot guruhiga 122 bemor, nazorat guruhiga esa 30 bemor kirdi. Ularning 65,5% erkaklar va 34,5% ayollar edi. **Natijalar:** olingan natijalar shuni ko'rsatadiki, oshqozon-ichak kasalliklari bo'lgan bemorlarda surunkali periodontit nafaqat mahalliy omillar, balki tizimli yallig'lanish va immunitetning buzilishi tufayli ham yuzaga keladi. Ikkala komponentga ham ta'sir qilish orqali kombinatsiyalangan terapiya faqat standart davolashdan ko'ra yaxshiroq natijalar berdi. Lazer-vakuum terapiyasi qon aylanishini yaxshilash, to'qima shishini kamaytirish va regeneratsiyani rag'batlantirish orqali terapevtik samaradorlikni qo'shimcha ravishda oshirdi. **Xulosa:** kasallikning og'irligiga asoslangan tabaqalashtirilgan davolash usuli klinik jihatdan ahamiyatli ekanligini isbotladi: yengil holatlar davolanishga tezda javob berdi, og'ir holatlar esa ko'proq seanslarni talab qildi.

Kalit so'zlar: periodontit, oshqozon-ichak patologiyasi, Nigella sativa, lazer-vakuum terapiyasi, yallig'lanish, sitokin, periodontal kasalliklarni davolash.

PATHOGENETIC APPROACH TO PERIODONTAL THERAPY IN PATIENTS WITH GASTROINTESTINAL PATHOLOGY USING NIGELLA SATIVA OIL AND LASER-VACUUM TREATMENT: A CONTROLLED CLINICAL STUDY

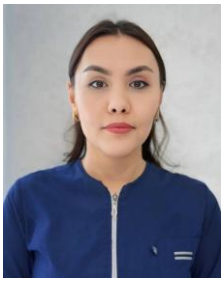
Kamilov H.P., Saidova M.A.

Objective: To evaluate the effectiveness of an integrated pathogenetic approach in patients with gastrointestinal pathologies. **Material and methods:** The study included 152 patients aged 40-80 years diagnosed with chronic periodontitis and concomitant gastrointestinal pathology. The study group included 122 patients, and the control group consisted of 30 patients. 65.5% were men and 34.5% were women**. Results:** The obtained results indicate that in patients with gastrointestinal disorders, chronic periodontitis is caused not only by local factors but also by systemic inflammation and immune dysregulation. By affecting both components, combination therapy yielded better results than standard treatment alone. Laser-vacuum therapy additionally enhanced the therapeutic efficacy by improving blood circulation, reducing tissue edema, and stimulating regeneration. **Conclusions:** The stratified treatment approach based on disease severity proved to be clinically significant: mild cases responded quickly to treatment, whereas severe cases required more sessions.

Key words: periodontitis, gastrointestinal pathology, nigella sativa, laser-vacuum therapy, inflammation, cytokines, periodontal treatment.

UO’K: 616.31-002:578.827.11

OPV INFEKSIYASI MAVJUD BEMORLARDA OG‘IZ BO‘SHLIG‘I SHILLIQ QAVATI PATOLOGIYALARINING KLINIK TAVSIFI VA RIVOJLANISH MEXANIZMLARI



Xamrayeva N.X., Turayeva F.A.
Buxoro davlat tibbiyot institute

OPV infeksiyasi bugungi kunda global sog‘liqni saqlash tizimi uchun dolzarb muammolardan biri hisoblanadi. Jahon sog‘liqni saqlash tashkiloti ma’lumotlariga ko‘ra, dunyo bo‘yicha millionlab odamlar OPV infeksiyasi bilan yashamoqda. Ushbu infeksiya organizmning immun tizimini zararlab, turli