

**ICHAK TA'SIRLANISH SINDROMI MAVJUD BEMORLARDA ICHAK  
MIKROBIOTSENNOZINI BAHOLASH****Jumaboyeva Asal Rashid qizi**

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**Annotatsiya**

Ushbu maqolada ichak ta'sirlanish sindromi (ITS) mavjud bemorlarda ichak mikrobiotsenozining o'zgarishlarini baholash masalalari yoritilgan. Ichak mikrobiotasi organizmning immun, metabolik va hazm tizimlarining muvozanatini saqlashda muhim rol o'ynaydi. Mikrobiotsenozning buzilishi (disbioz) ITS patogenezining asosiy omillaridan biri hisoblanadi. Tadqiqotda mikrobiota holatini baholashning zamonaviy usullari, ularning afzalliklari va cheklovlari tahlil qilindi. Bundan tashqari ichak ta'sirlanish sindromi (ITS) bilan og'rigan 50 nafar bemor va 20 nafar sog'lom nazorat guruhi ishtirok etdi. Ichak mikrobiotsenozining holati nafas testi va metagenom tahlil yordamida baholandi. Tadqiqot natijalari ITS mavjud bemorlarda mikrobiotsenozning sezilarli darajada buzilganini, foydali bakteriyalar sonining kamayganini va disbiozning simptomlar og'irligi bilan bog'liqligini ko'rsatdi.

**Kalit so'zlar:** ichak ta'sirlanish sindromi, mikrobiotsenoz, disbioz, nafas testi, metagenom tahlil, SIBO, metagenom tahlil.

**ASSESSMENT OF INTESTINAL MICROBIOCENOSIS IN PATIENTS WITH  
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**Annotation**

This article highlights the assessment of changes in the intestinal microbiocenosis of patients with irritable bowel syndrome (IBS). The intestinal microbiota plays an important role in maintaining the balance of the body's immune, metabolic, and digestive systems. Disruption of the microbiocenosis (dysbiosis) is

considered one of the main factors in the pathogenesis of IBS. The study analyzed modern methods for assessing the state of the microbiota, their advantages, and limitations. In addition, the study involved 50 patients with irritable bowel syndrome and 20 healthy individuals as a control group. The state of intestinal microbiocenosis was evaluated using a breath test and metagenomic analysis. The results showed that patients with IBS had significant disturbances in microbiocenosis, a decrease in the number of beneficial bacteria, and a correlation between the severity of dysbiosis and the intensity of symptoms.

**Keywords:** irritable bowel syndrome, microbiocenosis, dysbiosis, breath test, metagenomic analysis, SIBO, metagenomic analysis.

### Kirish

So‘nggi yillarda ichak mikrobiotasining organizm sog‘lomligini saqlashdagi roli tibbiyotda dolzarb mavzulardan biriga aylandi. Mikrobiotsenozning tarkibi, xilma-xilligi va metabolik faolligi ichak shilliq qavatining barqarorligi hamda immun tizimi faoliyatiga bevosita ta’sir ko‘rsatadi.

Ichak ta’sirlanish sindromi (ITS) — bu kichik yoki yo‘g‘on ichakda bakterial o‘rishning ortishi, motilite buzilishi va disbioz bilan kechuvchi holat bo‘lib, u diareya, meteorizm, qorinda og‘riq, shishish, malabsorbsiyon kabi belgilar bilan namoyon bo‘ladi. Ichak mikrobiotasi inson organizmining “yashirin a’zosi” bo‘lib, immunitet, metabolism va hazm jarayonlarida muhim rol o‘ynaydi. Ichak ta’sirlanish sindromi (ITS)da bakterial muvozanatning buzilishi — ya’ni disbioz — asosiy patogenetik omil hisoblanadi. Disbioz natijasida gaz hosil bo‘lishi, meteorizm, shishish, malabsorbsiyon, ich ketishi yoki qabziyat simptomlari kuchayadi.

### Maqsad

Ichak ta’sirlanish sindromi mavjud bemorlarda mikrobiotsenozning o‘zgarishlarini aniqlash, disbioz darajasini baholash va klinik simptomlar og‘irligi bilan bog‘liqligini statistik jihatdan tahlil qilish. Materiallar va usullar

#### Materiallar va metodlar

Tadqiqot ishtirokchilari

- Asosiy guruh: ITS tashxisi qo‘yilgan 50 nafar bemor (25 ayol, 25 erkak), o‘rtacha yosh –  $42 \pm 8$  yil.
- Nazorat guruhi: 20 nafar sog‘lom shaxs.
- Bemorlar Rim IV diagnostik mezonlari asosida ITS deb baholandi.

Tadqiqot usullari:

1. Klinik baho: shishish, diareya, qabziyat, og‘riq, meteorizm intensivligi 0–3 ballik shkalada baholandi.
2. Nafas testi: glukoza yuklamasi (75 g)dan so‘ng  $H_2$  va  $CH_4$  darajasi 20 ppm dan ortsa, SIBO mavjud deb qabul qilindi.

3. Mikrobiologik tahlil: najas namunalaridan DNK ajratilib, 16S rRNA genini sekvenslash orqali bakterial turlar aniqlangan.
4. Statistik tahlil: t-test,  $\chi^2$  testi, Pearson korrelyatsiyasi (r) yordamida tahlil qilindi.  $P < 0,05$  qiymat ishonchli deb olindi.

### Natijalar va tahlil

#### 1. Nafas testi natijalari

| Guruh                 | H <sub>2</sub> testi (%) | ijobiy CH <sub>4</sub> testi (%) | ijobiy Umumiy SIBO aniqlanish (%) |
|-----------------------|--------------------------|----------------------------------|-----------------------------------|
| ITS bemorlari (n=50)  | 32 (64%)                 | 10 (20%)                         | 42 (84%)                          |
| Nazorat guruhi (n=20) | 2 (10%)                  | 1 (5%)                           | 3 (15%)                           |

ITS bemorlarida SIBO aniqlanish darajasi nazorat guruhiga nisbatan sezilarli yuqori ( $p < 0,001$ ).

#### 2. Mikrobiota tarkibi o'zgarishi

| Bakteriya turi                    | ITS bemorlarida (%) | Nazoratda (%) | P       |
|-----------------------------------|---------------------|---------------|---------|
| <i>Bifidobacterium spp.</i>       | 18 ± 4              | 32 ± 5        | < 0.001 |
| <i>Lactobacillus spp.</i>         | 20 ± 3              | 30 ± 4        | < 0.01  |
| <i>Enterobacteriaceae</i>         | 25 ± 5              | 10 ± 3        | < 0.001 |
| <i>Clostridium spp.</i>           | 15 ± 2              | 8 ± 2         | < 0.05  |
| <i>Methanobrevibacter smithii</i> | 10 ± 2              | 5 ± 1         | < 0.05  |

ITS bemorlarida foydali bakteriyalar soni kamaygan, shartli-patogen turlar esa ko'paygan.

ITS mavjud bemorlarda mikrobiota tarkibi sezilarli darajada o'zgaradi:

- Bifidobakteriyalar va laktobatsillarning kamayishi,
- Enterobakteriyalar, Clostridium, Escherichia coli turlarining ortishi,
- Metanogen bakteriyalar (*Methanobrevibacter smithii*) faolligining oshishi aniqlangan.

Metagenom tahlillari shuni ko'rsatdiki, ITS bemorlarining 70–80 %ida mikrobiotsenozning xilma-xilligi kamaygan, Firmicutes/Bacteroidetes nisbati buzilgan.

Nafas testida esa bemorlarning 55–60 %ida vodorod yoki metan gazlarining 20 ppm dan yuqori ortishi qayd etilgan.

Bundan tashqari, disbioz darajasi klinik simptomlar og'irligi bilan korrelyatsiyada ekanligi ( $r = 0,72$ ;  $p < 0,05$ ) aniqlangan.

### Muhokama



ITS patogenezida mikrobiotsenoz buzilishining asosiy oʻrni bor. Bakterial ortiqcha oʻsish natijasida uglevod va yogʻlarning parchalanishi buziladi, gaz hosil boʻlishi kuchayadi, toksinlar ichak epiteliyasini shikastlaydi.

Nafas testlari ITS diagnostikasida qulay, ammo ularning sezuvchanligi 60–70 % atrofida boʻlib, soxta natijalar ehtimoli yuqori. Metagenom tahlillari esa aniqroq boʻlsa-da, amaliyotda qimmat va standartlashtirilmagan.

Shu sababli, kompleks yondashuv — klinik baho, nafas testi, laborator koʻrsatkichlar va metagenom tahlilini birgalikda qoʻllash eng toʻgʻri yoʻnalish sifatida taklif etiladi.

### Xulosa

1. Ichak ta'sirlanish sindromi bemorlarida mikrobiotsenozning sezilarli buzilishi kuzatiladi.
2. Mikrobiota holatini baholash uchun nafas testi, aspiratsiya va metagenom tahlili kabi usullar bir-birini toʻldiruvchi tarzda qoʻllanishi lozim.
3. Mikrobiotsenozni normallashtirish (probiotik, prebiotik, antibiotik terapiyasi va parhez) ITSni davolashda muhim ahamiyat kasb etadi.
4. Kelgusida ichak mikrobiotasining individual tarkibini hisobga olgan personalizatsiyalashgan davolash yondashuvlari ITS terapiyasining samaradorligini oshiradi.

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