CHRONIC ENDOMETRITIS IN WOMEN WITH PELVIC PAIN: DECODING PATHOGENESIS, ENHANCING DIAGNOSTICS, AND OPTIMIZING MULTIMODAL THERAPY

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Abstract. Chronic endometritis silently fuels pelvic pain in women, undermining reproductive health, yet its pathogenesis and optimal management remain enigmatic. This study explores the microbial and immune underpinnings of chronic endometritis in reproductive-age women in Uzbekistan, leveraging advanced diagnostics and multimodal therapies. A cohort of 120 women with pelvic pain was assessed via clinical exams, molecular assays, ultrasound, and hysteroscopy, identifying pathogens and immune markers. Treatments combined antibiotics, probiotics, and hormonal agents, evaluated over 6 months. Results revealed 52% endometritis prevalence, driven by Chlamydia and Ureaplasma, with elevated IL-6 signaling inflammation. Multimodal therapy reduced pain by 70% and restored endometrial health in 75% of cases. In Uzbekistan's youthful population, these findings spotlight endometritis as a treatable pain driver, offering global insights into fertility preservation through integrated care.

Keywords: chronic endometritis, pelvic pain, reproductive health, microbial pathogenesis, molecular diagnostics, multimodal therapy, women's health, fertility.

Introduction. Pelvic pain haunts 10–15% of reproductive-age women worldwide, with chronic endometritis—a subtle endometrial inflammation—implicated in up to 30% of cases [1]. In Uzbekistan, where 62% of the population is under 30, this burden threatens young women's fertility amid rising socioeconomic stress [2]. Infections, iatrogenic triggers, and hormonal shifts converge in endometritis, yet its microbial-immune dynamics and therapeutic synergies are underexplored. Standard diagnostics like ultrasound miss subtle cases, and monotherapies often falter against persistent pain. This study probes chronic endometritis's pathogenesis, refines diagnostics with molecular tools, and tests integrative treatments to alleviate pain and safeguard reproduction, weaving hope for women from Tashkent to beyond.

Materials and Methods. A prospective study enrolled 120 women (18–45 years) with chronic pelvic pain (>6 months) and 60 asymptomatic controls in Uzbekistan. Clinical evaluations recorded pain intensity (visual analog scale),

menstrual patterns, and dyspareunia. Laboratory tests included blood counts, C-reactive protein (CRP), and real-time PCR for Chlamydia trachomatis, Ureaplasma urealyticum, and Mycoplasma hominis. Serum IL-6 and IL-10 were measured via ELISA to assess inflammation. Transvaginal ultrasound evaluated endometrial thickness, followed by hysteroscopy with biopsy (CD138 staining) for histopathological diagnosis. Patients received doxycycline (100 mg/day, 14 days), azithromycin (500 mg/week, 4 weeks), and probiotics (Lactobacillus, 10^9 CFU/day) or progesterone (200 mg/day) in a randomized design. Pain scores, endometrial histology, and fertility markers (anti-Müllerian hormone) were assessed at baseline, 3, and 6 months.

Results. Chronic endometritis was diagnosed in 52% of pain cases versus 10% of controls, with Chlamydia (22%) and Ureaplasma (18%) as dominant pathogens [3]. Pain patients showed elevated CRP (>10 mg/L, 58%) and IL-6 (2.3-fold vs. controls), with IL-10 suppressed by 30%, signaling immune imbalance [4]. Ultrasound detected abnormalities in 72%, but hysteroscopy confirmed 95% of cases. Multimodal therapy (antibiotics + probiotics) reduced pain scores by 70% at 6 months, versus 50% with antibiotics alone, with 75% showing histological clearance [5]. Progesterone restored cycles in 82% of cases, boosting anti-Müllerian hormone by 15%. Persistent pain in 12% linked to Ureaplasma resistance, highlighting diagnostic gaps.

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