

above protocol showed significant improvement in patient's mental status and eventually became stable. He was advised to receive lifelong ART and continuous monitoring of CD4+ counts and viral load (HIV status).

CHANGES OF INTESTINAL MICROBIOME AND THERAPEUTIC STRATEGIES FOLLOWING A SEVERE BURN

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Introduction. Serious side effects from severe burns include multiple organ failure, infection, and a high mortality rate. The greatest microbial resource in the individual's body, the intestinal microbiome, is heavily involved in this pathological mechanism. Following a serious burn, it is usual to have gut dysbiosis and breakdown of the intestinal epithelial barrier, which can result in microbes' translocation into the circulation and adjacent organs.

Aim of the study. Thus this research detailing alterations in the intestinal mucosal barrier's function and the gut flora following severe burns. And also discussed the possibilities and difficulties associated with microbial treatment.

Materials and methods. A comprehensive analysis of the publications discussing dysbiosis of the intestinal microbiota, alterations in the intestinal mucosal barrier and therapeutic approaches after a severe burn, was carried out.

Results and discussion. Dysbiosis of intestinal microbiota following burns. Following a severe burn obligatory anaerobes and Bifidobacterium, which decreased over time, and opportunistic pathogens including Escherichia coli and enterococci, which greatly increased in number. Following the course of therapy, the gut microbiota started to remodel. As a result, the majority of opportunistic infections declined, eventually returning to normal. While helpful bacteria steadily proliferated [1].

During the initial phases of burn gut dysbiosis increased and some probiotic microorganisms, such as butyrate-producing bacteria, may have decreased, while potentially harmful bacteria increased. Research revealed that in the early post-burn stage, Proteobacteria was abundant, mostly accompanied by an increase in Escherichia and Shigella species and a drop in Firmicutes/Bacteroidetes levels [3].

Changes in intestinal mucosal barrier. The development and incidence of mechanical barrier damage brought on by severe burns are either directly or

indirectly influenced by the stress reaction, ischemia, hypoxia, proinflammatory responses, bacteria, and their endotoxins. In addition, sepsis, immunological disturbance, hyper metabolism response, shock following burn, and numerous organ dysfunction syndromes are intimately associated with the breakdown of the gut mechanical barrier. These elements have the potential to disrupt the gut's mechanical barrier by altering TJs protein expression or relocating it [3].

Increased intestinal permeability causes gastrointestinal bacteria and endotoxins to rapidly penetrate the intestinal barrier and move to far-off organs including the liver, lungs, and spleen. They can even enter the circulation through the lymphatic system or portal vein [4].

Therapeutic Strategies. The following primary therapeutic strategies are used for adjusting gut microbiota in severe burn patient: early nutritional support therapy during hypermetabolic state, antibiotics or antifungal medicines use to decrease the total microbial burden, use dietary management or the addition of live microbes to regulate the nature and activity of the gut microbiota and Fecal Microflora Transplantation (FMT) [5].

Conclusion. According to several studies in persons who have suffered severe burns, intestinal microorganisms are unbalanced, opportunistic bacteria proliferate, helpful bacteria diminished, and levels of certain bacterial byproducts that preserve the gut mucosal barrier are lowered. In addition, microbial translocation and bacteremia are caused by disruption of the intestinal mucosal barrier, leading in an aberrant systemic immune system reaction and multiple organ failure.

Infections have become the most common cause of death following serious burn injuries. Thus it is necessary to use empirical antibiotic treatment for multidrug resistant flora in burn patients. With the positive outcomes of the use of probiotic and FMT in several intestinal inflammatory illnesses, they are predicted to become promising treatments for intestinal alterations in individuals with severe burn.

ЛІТЕРАТУРА

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