A bélflóra és a szöveti oxigénhiány szerepe a bél gyulladásos megbetegedéseiben

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Összefoglalás

Az oxigénhiányra adott sejt szintű válasz megértése a modern molekuláris biológiai egyik nagy eredménye. A kutatások nyomán egy olyan molekuláris szabályozó rendszer képe tárult elénk, amely kiterjedt kapcsolatokat tart fent olyan klasszikus jelátviteli útvonalakkal, mint amilyen például a gyulladásos válasz klasszikus mediátora, az NF-κB. A hipoxia és gyulladásos jelátvitel kapcsolatának feltérképezése egyúttal ahhoz a felismeréshez is elvezetett, hogy a hipoxiának, illetve az arra adott sejt szintű válasznak központi szerepe van az olyan gyulladásos megbetegedések patofiziológiájában is, mint amilyen a *colitis ulcerosa*, illetve a Crohn betegség. Az utóbbi évek vonatkozó vizsgálatai alapján úgy tűnik, hogy a gasztrointesztinális rendszer krónikus gyulladásos megbetegedései mögött rejlő folyamatokban fontos, ha nem egyenesen alapvető szerepe van az intesztinális epitélium sajátos metabolikus homeosztázisának, amelyet – legalább részben – a normális bélflóra idéz elő több, a hipoxia-indukálható faktorok által közvetített intracelluláris folyamaton keresztül. Rövid összefoglalónkban a terület legutóbbi eredményeit tekintjük át.

Kulcsszavak: gyulladásos bélbetegségek, bélflóra, hipoxia, HIF-1

Role of the intestinal microbiome and hipoxia in gut inflammation

Summary

Understanding the molecular background of the cellular response to oxygen depletion is one of the greatest achievments of contemporary molecular biology. What has emerged is a pathway with multiple connections with classical signaling mechanisms including the NF-κB inflammatory signaling machinery. Appreciation of this interaction led to the discovery of the role of hipoxia in pathologies like the *colitis ulcerosa* or Crohn's disease. Recent advances in the field indicate that the pathophysiology underlying the chronic inflammatory disorders of the human gastrointestinal system includes the unique metabolic homeostasis of the intestinal epithelium maintained by the intestinal microbiome via various measures mediated by the hipoxia-inducible factors, master regulators of the cellular hipoxic response. Here, we provide a short overview of the latest results of the field.

Keywords: inflammatory bowel diseases, gut microbiota, hipoxia, HIF-1

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