POTENTIAL PRO-INFLAMMATORY ROLE OF VEGF IN PATIENTS WITH CROHN'S DISEASE

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MOGUĆA PROZAPALJENSKA ULOGA VEGF KOD PACIJENATA SA KRONOVOM BOLEŠĆU

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ABSTRACT

The aim of this study was to investigate the expression patterns of p16, p53 and VEGF in affected tissue and serum levels of cytokines TNF-α, IL-6, TGF-β and IL-17 in patients with ulcerative colitis (UC) and fistulating Crohn's disease (CD). Serum levels of cytokines in patients with ulcerative colitis (n=24) and with Crohn's disease (n=7) were analysed by ELISA. In colonoscopically obtained biopsies, p16, p53 and vascular endothelial growth factor expression were evaluated by immunohistochemistry.

The results of this study clearly show the predominance of pro-inflammatory type 1 and 17 immune response in patients with CD compared to those with UC. We believe that altered p16 and p53 induce enhanced VEGF expression and implicates enhanced production of pro-inflammatory TNF-α and IL-6. TNF-α and IL-6 further facilitate development of type 1/17 immune response.

Key words: *ulcerative colitis, Crohn's disease, p16, p53, VEGF, cytokines*

SAŽETAK

Cilj ove studije je bio da se ispita ekspresija p16, p53 i VEGF u obolelom tkivu i serumske koncentracija citokina TNF-α, IL-6, TGF-β i IL-17 kod pacijenata sa ulceroznim kolitisom (UC) i fistulizirajućom Kronovom bolešću (CD). Serumske vrednosti citokina kod pacijenata sa ulceroznim kolitisom (n=24) i sa Kronovom bolešću (n=7) analizirane su ELISA metodom. U kolonoskopski dobijenim biopsijama, ekspresija p16, p53 i vaskularnog endotelnog faktora rasta određivana je imunohistohemijski.

Rezultati ovog istraživanja jasno pokazuju predominaciju proinflamatornih tip 1 i tip 17 imunskih odgovora kod pacijenata sa CD u poređenju sa pacijentima obolelim od UC. Mi verujemo da izmenjena ekspresija p16 i p53 indukuje pojačanu ekspresiju VEGF-a koja implikuje pojačanu sekreciju pro-inflamatornih citokina TNF-α i IL-6. TNF-α i IL-6 sledstveno facilitiraju razvoj Tip1/17 imunskog odgovora.

Ključne reči: *ulcerozni kolitis, Kronova bolest, p16, p53, VEGF, citokini*

ABBREVIATIONS

ABC-Avidin-Bioton peroxidase Complex
CD-Crohn's disease
CDK-Cyclin dependent kinase
CARD-Caspase activating recruitment domain
DNA- Deoxyribonucleic acid
ELISA-Enzyme Linked Immunosorbent Assay
IBD-Inflammatory bowel disease (IBD)
IFN-γ- Interferon-γ
IL-Interleukins
MAPK-Mitogen Activated Protein Kinase
NF-kB –Nuclear factor kappa light chain enhancer of activated B cells
NOD2-Nucleotide binding oligomerization domain containing protein 2
NK cells-Natural Killer Cells
VEGF- Vascular endothelial growth factor
TNF-α-Tumour necrosis factor alpha
TGF-β-Transforming growth factor beta
UC-Ulcerative colitis

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