

## English Abstract Session

2025年11月15日(土) 13:30 ~ 14:12 第10会場

**[E5] English Abstract Session 5 Benign Disease & Early Cancer**

Moderator:Fumio Ishida(Digestive disease center, Showa Medical University Northern Yokohama Hospital), Ravi Kiran(Global Center for Colorectal Surgery/IBD, Columbia University Medical Center)

**[E5-1] Neutrophil Biomarkers and EDCs for IBD Prediction via Bioinformatics & ML**

Shihui Chen, Jianbao Zheng, Junhui Yu, Xuejun Sun (The First Affiliated Hospital of Xi'an Jiao Tong University)

This study investigates neutrophil-associated genes in inflammatory bowel disease (IBD) pathogenesis, identifying diagnostic biomarkers and linking key genes to endocrine-disrupting chemicals (EDCs). Utilizing four IBD datasets, neutrophil infiltration differences were analyzed between IBD and controls. Differential expression analysis revealed 496 DEGs, and WGCNA identified 182 neutrophil-related hub genes. Machine learning (LASSO/SVM-RFE) prioritized four signature genes (CHI3L1, IL6, PTGS2, TREM1) from 32 candidates, validated via Nomogram for diagnostic efficacy. Transcriptional regulatory networks highlighted upstream regulators. Leveraging these genes, 33 potential IBD-associated EDCs (e.g., bisphenols, phthalates) were identified. RT-qPCR confirmed elevated expression of signature genes in IBD patients versus controls. Findings reveal neutrophil-driven mechanisms in IBD, propose CHI3L1, IL6, PTGS2, and TREM1 as novel diagnostic biomarkers, and establish gene-EDC connections, offering insights for clinical management and environmental risk mitigation.