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生物統計学分野 博士課程 2 年 田中晴菜

Introducing the association between non-invasive scores and serum biomarkers for fatty liver disease and colorectal cancer (CRC) in the era of Metabolic dysfunction-Associated Steatotic Liver Disease (MASLD)

Colorectal cancer (CRC) remains a leading cause of cancer-related mortality worldwide[1]. While colonoscopy is the gold standard for screening, there is growing interest in identifying non-invasive biomarkers for early detection and risk stratification. Obesity and metabolic dysfunction, particularly Metabolic dysfunction-Associated Steatotic Liver Disease (MASLD), have emerged as significant risk factors for CRC[2]. MASLD, recently redefined from Non-Alcoholic Fatty Liver Disease (NAFLD), incorporates at least one cardiometabolic risk factor and aligns more closely with metabolic syndrome[3].

Recent epidemiological studies have reported an increased risk of colorectal adenoma in NAFLD patients, with evidence suggesting that advanced liver fibrosis is a key determinant of colorectal adenoma risk[4].Given the well-known established “adenoma-carcinoma sequence”, where adenomas serve as precursors to CRC development[5], considering liver fibrosis in colorectal neoplasia risk assessment is crucial. While NAFLD has traditionally been linked to CRC risk, the recent reclassification of NAFLD to MASLD emphasizes metabolic dysfunction as a key criterion. However, it remains unclear whether this shift enhances ability to predict colorectal neoplasia risk, including CRC, particularly in relation to liver fibrosis. Further investigation is necessary to determine how MASLD-specific criteria influence the association between liver fibrosis, adenomas, and CRC.

At St. Luke’s International Hospital, a research initiative using the St. Luke’s Preventive Medicine Cohort (SLPMC) aims to evaluate the association between MASLD and CRC. By leveraging metabolomic profiling, the study seeks to elucidate the metabolic and hepatic mechanisms underlying colorectal tumorigenesis and refine CRC risk prediction. This research may help early CRC detection and prevention strategies by integrating MASLD-specific metrics into risk assessment frameworks. In this presentation, I will discuss the new nomenclature and definition of MASLD and explore how prior studies have established connections between non-invasive scores and serum biomarkers for fatty liver disease and colorectal cancer in the context of MASLD.

References:

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