中文題目：胃癌篩檢的困境：血清澱粉樣蛋白 A 是一個極具潛力的生物標記嗎？

英文題目：The Dilemma of Gastric Cancer Screening：Could Serum Amyloid A be a potential biomarker？

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Background: According to the World Health Organization (WHO) statistics, in 2020, 1,089,000 people worldwide suffered from gastric cancer, and 768,000 people died of gastric cancer, which is the sixth most prevalent cancer and the fourth highest cancer death. The rate is highest in East Asia, Central and Eastern Europe and Latin America. Symptoms of early stomach cancer are usually mild and nonspecific. Once symptoms occur, they often go into the later stage. Even with surgery, the five-year survivability rate remains low. Early detection and diagnosis are thus essential to prognosis. However, the sensitivity and specificity of biomarkers commonly used in the diagnosis and prognosis of gastric cancer are insufficient, and reliable screening tools are not even available. Gastric cancer screening and diagnosis continues to be based on invasive examinations such as gastrointestinal endoscopy. Consequently, the development of a reliable, non-invasive tool that can be widely used in the diagnosis or screening of gastric cancer is very important. Recent advances in proteomics techniques, such as SELDI and HCLP, have led to the development of new biomarkers. Among them, Serum Amyloid A may a potential and reliable serum biomarker for early gastric cancer.

Method: We used Nano-probe affinity mass spectrometry to enrich, identify and quantify serum amyloid A variants. Then, develop a bioinformatics algorithms as a diagnostic model to distinguish the patient from moderate-high to low risk stomach cancer. To validate the usefulness of this model, we are conducting a retrospective cohort study to study the feasibility of amyloid serum A as a biomarker for gastric cancer screening. Between 2017 and 2021, the cohort had adult patients newly diagnosed with primary gastric cancer from endoscopic pathology. This study was reviewed and approved by the Kaohsiung Medical University Hospital's Human Trials Review Board (IRB) and each participant provided informed consent.

Results: A total of 360 patients were classified as neoplasia (120), inflammatory (120) and healthy gastric mucosa (120). The sensitivity, specificity, positive predictive value and negative predictive value of the diagnostic model for differentiating between gastric carcinoma and non-gastric carcinoma were 80.8%, 70.0%, 57% and 88%, respectively. This model also has 70.8% positive predictive value and 77.6% negative predictive value for separating gastric carcinoma of the gastris patient.

Conclusion: The diagnosis model based on bioinformatic algorithms of Serum Amyloid A variant can be a potential solution to the dilemma of gastric cancer screening for its acceptable value for the diagnosis of gastric carcinoma comparable to serum CEA, which is invalid for the diagnosis of gastric cancer.