

DO GASTROENTEROLOGISTS FULLY RELY ON NEW PHOTONICS TECHNOLOGIES FOR THE DIAGNOSIS OF COLORECTAL CANCER?

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INTRODUCTION: High incidence and mortality rate of colorectal cancer is a major concern for the global health system. For that, PICCOLO project aims to develop an innovative multi-photonic endoscope based on OCT (Optical Coherence Tomography) and MPT (Multi-Photon Tomography) technologies to improve the diagnosis of colorectal cancer by providing in real-time an in-vivo optical biopsy, supported by software based on deep learning algorithms.

OBJECTIVES: The objective of this study is to collect the opinion of gastroenterologists about this new endoscopic system, and mainly focusing on analyze the real confidence they have in using it in the future.

MATERIALS AND METHODS: 35 gastroenterologists and 11 residents watched a video presenting the PICCOLO project, containing a brief introduction about colorectal cancer, the current gold standard procedure for diagnosis (colonoscopy) and its clinical needs, objectives of the project, and the benefits for clinicians, patients, corporations and health systems. Afterwards, participants were asked to fill in a survey, prepared to get relevant information and feedback from end-users about the PICCOLO project, as well as the technologies and procedure currently used for the colorectal cancer diagnosis.

RESULTS: There were no significant differences between both groups, so global results show that 95% participants think that PICCOLO system would meet current clinical needs related to colonoscopy procedure and colorectal cancer diagnosis. Moreover, 96% clinicians consider that OCT/MPT photonic technologies would improve results obtained with advanced imaging technique currently used, such as Narrow Band Imaging (NBI). Although 89% participants would use this system in their service, only 54% of them would trust the diagnosis obtained by the software automatically, but under the supervision of a human expert. In addition, 37% clinicians would not trust such automatic diagnosis, but it would be good support for their decision.

CONCLUSIONS: Gastroenterologists think that PICCOLO system would meet the current medical needs of colorectal cancer diagnosis, but they do not fully rely on a diagnosis automatically provided by software without the supervision of a human expert. Therefore, PICCOLO system would not replace any clinical staff, but would serve as support for the decision making in the diagnosis of colorectal cancer.