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COMPUTER-AIDED OPTICAL DIAGNOSIS OF DIMINUTIVE RECTOSIGMOID POLYPS IN CLINICAL PRACTICE: A MULTICENTER PROSPECTIVE STUDY

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Background and aim: Preliminary data suggest that Ai is a promising tool for optical diagnosis of colorectal polyps. Whether its use in clinical practice can support clinicians for this purpose remains to be determined. The study aim was to prospectively evaluate whether the endoscopist optical diagnosis combined with the AI system output achieve >90% negative predictive value (NPV) in optical diagnosis of diminutive rectosigmoid polyps (DRSPs) having histopathology as reference standard. The agreement between the optical-based and the histology-based post-polypectomy surveillance intervals was also calculated according to both European Society of Gastrointestinal Endoscopy (ESGE) and United States Multi-Society Task force (USMSTF) guidelines.
Materials and methods: Consecutive outpatients referred colonoscopy in which at least one DRSP was identified were included. All DRSPs were real-time categorized as adenoma or non-adenoma by the endoscopist with the assistance of AI a user friendly specifically developed system (CADEYE®, Fujifilm Co., Tokyo Japan). All polyps were removed and sent for histopathology evaluation.
Results: Overall 588 DRSPs were detected in 379 patients; of them 8 were not retrieved for histological evaluation. The optical diagnosis combining endoscopist evaluation and AI system was feasible in 92.1% of DRSPs (534/580). The sensitivity, specificity, positive and negative predictive value as well as accuracy for combined optical diagnosis were 87.8% (95% CI: 82.7-91.7%), 88.1% (95% CI: 83.8-91.3%), 84.1% (95% CI: 78.6-88.4%), 91.0% (95% CI: 87.0-93.8%) and 88.0% (95% CI: 85.3-90.8%)respectively. The post-polypectomy surveillance interval based on combined optical diagnosis was correctly established in 97.4% (95% CI: 95.7-98.9) and 92.6% (95% CI: 90.0-95.2) of patients according to ESGE and USMSTF, respectively.
Conclusions: The optical diagnosis combining the endoscopist evaluation with the AI output (combined optical diagnosis) surpasses the 90% NPV for rectosigmoid adenomas. Similarly, the post-polypectomy surveillance interval based on combined optical diagnosis was over 90% according to both ESGE and USMSTF guidelines.

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IMPACT OF COVID-19 PANDEMIC ON COLONOSCOPY AND SURGICAL INTERVENTIONS FOR COLORECTAL CANCER IN VENETO REGION

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Background and aim: Because of COVID-19 pandemic several healthcare activities were temporarily ceased during the two epidemic waves. However all urgencies, as well as oncological services, including screening colonoscopy following positive fecal occult blood test (FOBT), were always guaranteed, except in the first phase. The aim of this study is to quantify the impact of COVID-19 pandemic on colonoscopy and colorectal cancer surgical activities, analysing the reduction of screening activity.
Materials and methods: We analysed retrospectively colorectal cancer screening, colonoscopy and colorectal cancer surgical interventions from January to November 2020, compared to the average of the same period in 2018 and 2019. Data was extracted from the regional screening database, hospital discharge records and regional digital archives of outpatient services. χ^2 test was used to compare the reduction of screening and non-screening colonoscopies.
Results: 453,877 people were invited to participate in the FOBT, within the regional colorectal cancer screening programme, 115,976 fewer than the previous two years (-20.4%), with an adherence rate that dropped from 65.2% to 54.2%. The monthly reduction of screening participants was greater than the reduction of people invited to the screening programme and most marked in April (-86.8%) and May (-81.0%). Colonoscopies fell by 22.2% (67,138 in 2020 Vs. 86,298 for the 2018-2019) and it reached its lowest in April (-70.4%). The reduction was of 13.1% for screening colonoscopies following a positive FOBT, and 24.9% for non-screening colonoscopies ($p<0.001$). Surgical interventions were strongly reduced as well, from a yearly average of 2,466 to 2,250 colorectal cancer surgical procedures in 2020 (-8.7%), with the lowest rate in April and May, respectively -17.4% and -34.9%.
Conclusions: COVID-19 pandemic markedly reduced colorectal cancer screening activity, to the point that regional screening programmes were not able to completely recover the work lost during the first epidemic wave. Following the reduction of FOBT, also colonoscopy and colorectal cancer surgical interventions decreased during the epidemic wave and, up to November 2020, these healthcare services did not completely recover the lost work either. Nevertheless, considering the greater reduction of non-screening compared to screening colonoscopies, colorectal cancer screening seems to play a pivotal role in limiting the decrease of endoscopic and surgical interventions.