Carbon footprint from superfluous colonoscopies: potentialities to scale down the impact

We have with great interest read the excellent paper by Leddin *et al*,[1] in which they address the carbon footprint (CaF) and plastic waste from the vast number of colonoscopies performed in the USA annually. We feel obliged to elaborate on measures to bring down the environmental impact of endoscopic procedures. A single colonoscopy generates approximately 1.5 kg of plastic waste, and the CaF from all endoscopic procedures in the USA equals about 36 000 tCO2.[2] This calculation does not include the CaF from incinerated waste and the manufacturing process of endoscopy consumables. The '3 Rs' (reduce, reuse and recycle)[3] can be applied as an action-oriented approach to lessen the CaF from endoscopy procedures. Reducing the excessive number of colonoscopies is the obvious first step in a more environmental-friendly process. In recent years, there has been a steep increase in the number of performed colonoscopies, with a concurrent rise in histopathological examination of tissue specimens adding up on the CaF. Furthermore, a vast amount of colonoscopies are performed without a critical review of the referral indications. Minimising unnecessary procedures can be achieved by implementing strict evidence-based referral algorithms.[4] Moreover, there is a need of more evidence suggesting that patients benefit from removing diminutive and small polyps as they do not seem to harbour any malignant potential.

For sure, we need to improve our ability to predict which patients have a low likelihood of colorectal cancer. Other diagnostic modalities such as colon capsule endoscopy (CCE) and CT colonography could be first-line investigations.[5 6] Stool tests like the faecal immunochemical test (FIT) in the triage of patients with symptoms from the lower gastrointestinal tract have undoubtedly an excellent potential, but further research on adjusting cut-off levels and consequences hereof is needed.[7 8] Raising the FIT cut-off levels will inevitably decrease the number of subsequent colonoscopies; however, there is a delicate balance to avoid missing other cancers. Applying CCE as the next step (based on FIT values) in symptomatic patients has been proposed in a recent paper to reduce the number of redundant colonoscopies.[9] It can be performed in a primary healthcare setting and soon may involve retrievable capsules, hence reducing not only healthcare but also environmental impact. That said, we must take the onus of deciding the strategy not only for the betterment of the single patient but also to accommodate the environment and the healthcare service as a sustainable unit.

The ongoing development of artificial intelligence algorithms[10] that can distinguish hyperplastic lesions from neoplasia is probably essential to hasten a wider adoption of a 'diagnose and leave in' strategy on diminutive polyps. We must make a serious effort towards implementing a resect-and-discard strategy of diminutive and small polyps during colonoscopy and a 'diagnose and leave in' strategy when applying other diagnostic modalities (figure 1). Endoscopists and endoscopy units may counteract such actions due to reimbursement rules. In the wake of the COP26 conference, changes towards more sustainable healthcare services must be implemented soon involving every level of the healthcare system, from the behaviour of the endoscopists to the approach of national health boards. We need to do a meticulous step-by-step analysis of the environmental impact of the individual steps of the endoscopy unit to identify from which changes we can expect the most significant impact on the CaF.

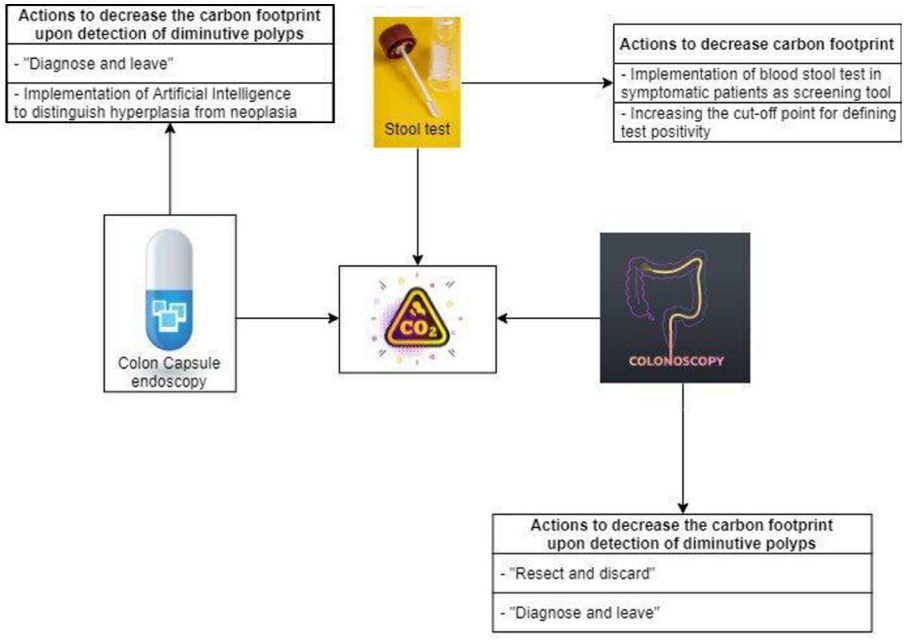

Figure 1 Potentialities to reduce the carbon footprint from superfluous colonoscopies.

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