Devices substitution can reduce environmental burden: what about strategies substitution?

We read with great interest the article by Henniger *et al*[1] about reducing scope 3 carbon emissions in endoscopy and would like to discuss several points.

First, we commend the study's transparency, as manufacturers provided detailed information about their fabrication and delivery processes. This collaboration exemplifies our shared goal of environmental protection. Furthermore, this is the first prospective study with an intervention aimed at reducing the endoscopy footprint, leading to significant positive impacts and encouraging further interventional ecological research.

Educating staff to reduce scope 3 emissions by minimising the number of devices is a promising approach to fostering sustainability. However, the study's overall device reduction of just 10% may not substantially lower our global footprint, as the emissions related to procedure devices represent only a fraction of the total environmental impact.

In our recent study comparing two types of endoscopic resections,[2] we measured the carbon footprint of Endoscopic Submucosal Dissection (ESD) and Endoscopic Piecemeal Mucosal Resection (EPMR) for colorectal neoplasia. Although devices contributed 10.5 kg CO_2 for EPMR and 13.2 kg CO_2e for ESD, they accounted for only 16% and 18% of the total procedure footprint, respectively. The primary contributors were patient transport (51.5% for EPMR and 45.6% for ESD) and if we also consider the inpatient stay, estimated to be 45 kg CO_2 per day in hospital,[3] the devices used in the procedure only represent 6 hours of hospitalisation.

When considering the entire management of colorectal neoplasia with the procedure and the successive follow-up procedures depending on the R0 status of the resection, the devices used during the first procedure only represent 5.9% of the global footprint in the piecemeal endoscopic mucosal resection (EMR) group and 8.9% in the ESD group (figure 1) for a total footprint of 150–180 kg CO_2e. In fact, when the number of follow-up to detect recurrences is increased due to the piecemeal nature of the resection, carbon footprint is finally increased compared with a one shot curative procedure (R0 resection) allowing to skip further follow-up for recurrence detection (and the corresponding transports).[4 5] Contrary to the hypothesis stated in the recommendations,[6] a more complex procedure performed at an expert centre can, although counterintuitive, result in a smaller carbon footprint than a simpler local technique, especially if it is part of a one-time curative treatment.

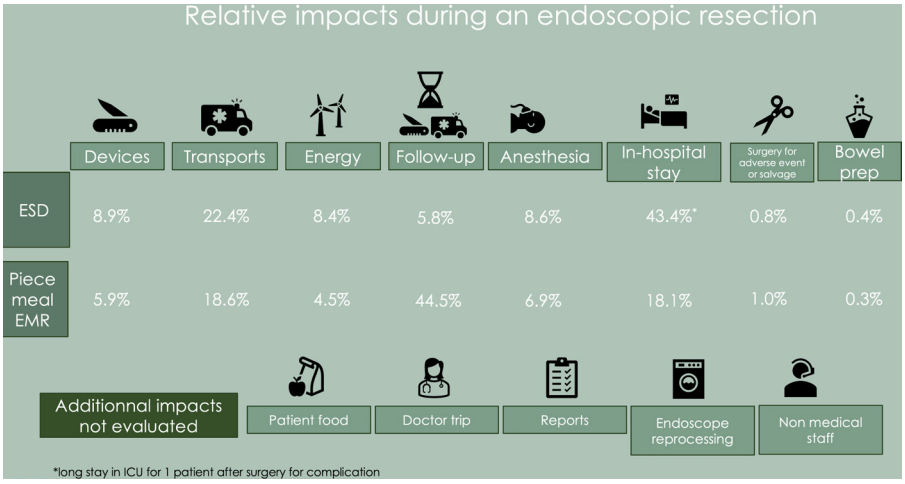

Figure 1 Relative impacts of devices versus other components in the global footprint of endoscopic resection. EMR, endoscopic mucosal resection; ESD, endoscopic submucosal dissection; ICU, intensive care unit.

In various studies, patient transport consistently accounts for over 40% of the environmental impact of endoscopic care in different studies on ambulatory endoscopy,[7] capsule endoscopy[8] or in this recent evaluation about endoscopic resections.[2] Therefore, reducing hospital visits is crucial. The authors of this study achieved a 10% reduction in procedures through systematic re-evaluation of their necessity, which likely had a greater impact than device reduction. Implementing a standard question, 'Is this endoscopy useful or futile?' could streamline this process.

Additionally, substituting face-to-face consultations with telemedicine could further minimise transport emissions, as studies show teleconsultations maintain care quality and patient satisfaction[9] while significantly reducing carbon footprints.[10]

In summary, we commend the authors for this excellent interventional study but emphasise that the environmental impact of our care is complex. Reducing patient transport through effective one-session strategies, limiting face-to-face consultations and cutting unnecessary procedures are practical methods to significantly decrease our impact without major structural changes (eg: buildings, expensive innovations).

Raphaëlle Grau,[1] **Jérémie Jacques,**[2,3] **Jérôme Rivory,**[1] **Mathieu Pioche** [1]

[1]Gastroenterology and Endoscopy, Edouard Herriot Hospital, Lyon, France
[2]Gastroenterology, Hopital Dupuytren, Limoges, France
[3]UMR 7252, CNRS XLIM, Limoges, France

Correspondence to Dr Mathieu Pioche; mathieu.pioche@chu-lyon.fr

Contributors Conceived and designed the analysis: RG, MP. Collected the data for the LCA: MP, JJ, RG. Contributed data or analysis tools: JJ, JR. Performed the analysis: JJ, RG, MP. Drafted the paper: MP, RG, JR.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests Mathieu Pioche: consultant for Olympus, trainer for Olympus, Pentax, Norgine, Boston, Cook, Atract and Ipefix (coinvention). Jérôme Rivory: consultant for Olympus, trainer for Olympus, Boston, Cook, Ovesco. Jérémie Jacques: honorarium ERBE medical ESD training, Olympus ESD training, FUJIFILM ESD training, Pentax MEdical ESD training, Boston Scientific Therapeutic EUS training, MAYOLI SPINDLER Lecture about pancreatic disease, JANSSEN CILAG; consulting fee PENTAX MEDICAL Organization of European ESD training.Raphaëlle Grau has nothing to disclose.

Patient consent for publication Consent obtained directly from patient(s).

Ethics approval Not applicable.

Provenance and peer review Not commissioned; internally peer reviewed.

To cite Grau R, Jacques J, Rivory J, *et al*. *Gut* Epub ahead of print: [*please include* Day Month Year]. doi:10.1136/gutjnl-2024-334092

Received 13 October 2024
Accepted 24 October 2024

Gut 2024;**0**:1–2. doi:10.1136/gutjnl-2024-334092

ORCID iD
Mathieu Pioche http://orcid.org/0000-0002-6482-2375

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