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# Local and systemic effects of intraoperative whole-colon washout with 5 per cent povidone-iodine

[HHS Vulnerability Disclosure](#)G Basha <sup>1</sup>, F Penninckx, J Mebis, L Filez, K Geboes, P Yap

Affiliations

## Affiliation

<sup>1</sup> Department of Abdominal Surgery, University Clinic Gasthuisberg, Catholic University of Leuven, Belgium.

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## Abstract

**Background:** Segmental intraluminal instillation of several tumoricidal agents including povidone-iodine has been advocated to prevent anastomotic recurrence after colonic resection for colorectal cancer. The local and systemic effects of on-table whole-colon washout using 5 per cent povidone-iodine were assessed in patients undergoing elective surgery for colorectal cancer.

**Methods:** The local effect of 5 per cent povidone-iodine on the colonic mucosa and the effect of colonic mucosal damage by povidone-iodine on tumour take was first investigated in Fischer 344 rats. In 12 euthyroid non-allergic patients, on-table whole-colon lavage via the appendix was performed. Systemic (thyroid function) and local (mucosal damage assessed by repeat biopsies) effects were studied, as well as the in vitro tumoricidal effect of the final anal effluent on tumour cell suspensions.

**Results:** After 30 min of contact with povidone-iodine the rat colonic mucosa was severely injured, with detachment of the epithelial cell layer. Povidone-iodine-induced 'colitis' did not result in tumour development after inoculation of 10(6) Mtn3 carcinoma cells in ten rats. Epithelial desquamation was also observed, in all but one patient, 1 and 4 h after colonic lavage. However, epithelial restitution started within 1 day and no abnormality was revealed after 3-7 days. Urinary iodine excretion increased markedly and was not within normal values after 1 week. Levels of thyroid hormones decreased significantly but became normal within 1 week. The anal effluent containing povidone-iodine was found to be tumoricidal in vitro on a human colonic carcinoma cell line and on a tumour cell suspension produced from the patient's tumour.

**Conclusion:** On-table whole-colon washout using 5 per cent povidone-iodine seems clinically feasible. This technique deserves further study as a substitute for preoperative bowel preparation and may help to prevent recurrent cancer due to implantation of viable exfoliated tumour cells.

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