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DOI:

[10.1155/2014/794017](https://doi.org/10.1155/2014/794017)

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Document Version

Publisher's PDF, also known as Version of record

Citation for published version (Harvard):

Iacucci, M 2014, 'Hemostatic spray - a welcome addition to the armamentarium against gastrointestinal bleeding', *Canadian Journal of Gastroenterology and Hepatology*, vol. 28, no. 2, pp. 71.
<https://doi.org/10.1155/2014/794017>

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Hemostatic spray – a welcome addition to the armamentarium against gastrointestinal bleeding

Marietta Iacucci MD PhD

Endoscopic vasoconstrictor injections, thermal therapy with heater probes, gold probes or bipolar electrocoagulation, hemoclips and argon plasma coagulation provide a choice of therapies to endoscopists to treat upper and lower nonvariceal hemorrhage. The newest modality that has become recently available in Canada is Hemospray (Cook Medical, USA), a proprietary hemostatic spray propelled by carbon dioxide under pressure, which can achieve rapid hemostasis when it comes in contact with blood. The drying effect of the spray and activation of clotting, in addition to pure tamponade, underlies its probable mechanism of action. This is a welcome addition because multimodal treatment is most likely to arrest gastrointestinal hemorrhage.

Recently, an international survey of Hemospray use reported 92% immediate hemostasis either used alone or in combination with other modalities (1). It has even been used in variceal hemorrhage and, if confirmed to be safe, may provide a novel and convenient alternative to cyanoacrylate injection into gastric varices. A major advantage of this technique is that it does not require very precise targeting such as application of bipolar electrocoagulation or deployment of hemoclips. An additional advantage is its coverage of a large surface area; thus, it may rapidly become a therapy of choice in bleeding malignant tumours (2), which are currently very difficult to manage with existing endoscopic hemostasis modalities. It may also be used easily for angiodysplasia of the colon or polypectomy bleeding (3). The procedure is quick and can, therefore, be completed rapidly in frail, elderly patients with few adverse events. Periampullary tumours or sphincterotomy hemorrhage from the papilla need to be treated cautiously because there is a potential risk of bile duct obstruction, although the effects of the spray disappear within 24 h to 72 h.

In the current issue of the *Journal*, Yau et al (4) (pages 72-76) from Vancouver (British Columbia) reported their experience with using Hemospray to treat upper gastrointestinal bleeding. Acute hemostasis was achieved in 93% of patients. A visceral perforation and splenic infarction were reported. The rebleeding rate was, however, quite high (39%). It is clear that some optimization of the bleeding site is necessary, especially by vigorous suction to remove pools of blood or fluid. Special care must be taken to prevent occlusion of the catheter spray or the endoscope channel. It is important to be sufficiently disciplined to avoid aspiration while the catheter is in the endoscope channel. Some further guidance on the quantity of Hemospray that should be used is necessary, although repeated spraying is generally well tolerated

and the sprayed carbon dioxide is rapidly reabsorbed. Endoscopy assistants are easily trained in the technique and rapidly become conversant with the equipment. It is likely that new or novel indications and innovations will emerge (Box 1) regarding this technique, and it is important that pharmacoeconomic analysis is performed to confirm its cost effectiveness.

BOX 1

Specific applications of hemostatic spray to achieve endoscopic hemostasis

Potentially first line

- Bleeding lesions, such as peptic ulcers, where it is difficult to position the endoscope optimally
- Diffuse multifocal hemorrhage such as from malignant gastrointestinal tumour
- Large, bleeding vascular lesions

Potentially second line

- Failed conventional endoscopic hemostasis
- Polypectomy or postpolypectomy hemorrhage
- Gastric antral vascular ectasia
- Gastrointestinal hemorrhage in patients with impaired coagulation
- Radiation proctopathy

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Received and accepted for publication December 19, 2013



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