

NTU study shows mineral powder can stop peptic ulcer bleeding

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A powder sprayed directly on ulcers that develop on the lining of the stomach and small intestine has been shown to have a 91 per cent success rate in putting a stop to bleeding, buying doctors precious time to treat the patient.

The study was done on 67 patients diagnosed with the most serious form of peptic ulcers, which are open sores that develop on the inside lining of the stomach and the upper portion of the small intestine.

The elderly are particularly affected by peptic ulcers. Peptic ulcers that develop in the stomach are also commonly known as gastric ulcers. If left untreated, they

can result in internal bleeding.

The mineral powder, known as Hemospray, was directly applied to the ulcers using an endoscope and had a 91 per cent success rate in stopping bleeding and starting the healing process. The study, which was led by the Nanyang Technological University (NTU), was to evaluate the safety and effectiveness of Hemospray as a therapy for patients with actively bleeding peptic ulcers.

Hemospray was developed by Cook Group, an American medical device manufacturer, and had shown promise in treating peptic ulcers, but required further studies into its efficacy, NTU said in a statement.

In the presence of active bleeding, Hemospray ejects a mineral



Professor Joseph Sung, who led the study on the treatment of peptic ulcers using Hemospray.

91%

Hemospray's success rate in stopping bleeding when applied directly to the ulcers using an endoscope.

powder to form a barrier on contact with the peptic ulcer to stop the bleeding. It is non-toxic and is not absorbed or metabolised by the body. It will be expelled from the body within 72 hours of its administration.

When combined with other treatments, the success rate of the spray increased to 97 per cent.

The bleeding can be stopped for a few hours to a few days, so that doctors have time to work on providing more effective treatments to the patient, Professor Joseph Sung, who led the study, told The Straits Times in an interview.

"These few hours are critical," said Prof Sung, who is NTU's senior vice-president (health and life sciences) and also dean of NTU's Lee Kong Chian School of Medicine.

He added: "It is important because the patient might otherwise die from uncontrolled bleeding. In these few hours, we are also able to stabilise the patient, get surgery done or perform other treatment. It also allows us to see where exactly the bleeding is coming from."

Peptic ulcers are mostly caused by the bacterium *Helicobacter pylori* and long-term use of non-steroidal anti-inflammatory drugs, such as ibuprofen and naproxen sodium.

The ulcers can also result in complications such as a hole in the stomach wall, blocked passage of food through the digestive tract, as well as a higher risk of developing gastric cancer.

The powder is not a drug that heals or gets rid of the ulcer.

Rather, it is used as a stopgap measure to give doctors more time to treat the patients.

The doctor first puts an endoscope into the stomach or intestine and finds the lesion where the bleeding is coming from. Then there is a device that can be used to spray this powder on the bleeding site. The powder works instantly the moment it is sprayed, Prof Sung said.

The study involved doctors from hospitals and universities in Canada, Britain, the Netherlands and Hong Kong.

The results of the study were published in the peer-reviewed academic journal *Gastrointestinal Endoscopy* in March.

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