Scientists tap into spinal response from gastric reflux

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(Medical Xpress)—University of Adelaide researchers have made advances in the understanding of one of the world's most common medical conditions, gastric reflux, and how patients experience pain from it.

Gastric reflux affects as many as one in five people in Western countries and is on the increase in Asia. Diet and lifestyle, as well as genetic and hormonal issues, are commonly considered to be major causes of gastric reflux.

In laboratory studies, researchers have identified the nerve pathways in the spinal cord that transmit pain signals associated with gastric reflux to the brain.

"This is the first time anyone has shown the pain pathways in the spinal cord that receive direct input from acid-sensitive nerve endings in the oesophagus," says Dr Andrea Harrington, an Australian Research Council (ARC) DECRA Research Fellow in the University's Nerve-Gut Laboratory.

"This is important because we know that the oesophageal nerves undergo changes in gastric reflux patients that make them overly sensitive to acid. There is also evidence to suggest that the whole circuitry becomes abnormally sensitive in these patients, resulting in ongoing pain responses in the absence of actual acid reflux. Our research will enable us to identify such mechanisms," she says.

Dr Harrington says it's important to better understand how we detect and perceive pain from gastric reflux.

"Being able to know exactly how pain pathways connect to the brain will give us new insights, which in the years ahead could lead to improved treatment," she says.

Dr Harrington says most current treatments focus on reducing the amount of acid in the stomach.

"However, we think it's a much more complex issue than that. There might come a time when treatments are able to both address the amount of acid in the stomach while correcting the sensitivity of nerve endings. This would go a long way to providing more balanced relief to suffers of gastric reflux."

The next step in this research is to find out how the pain pathways are changed in reflux sufferers.

More information: The results of Dr Harrington's work have been published in the journal *Neurogastroenterology & Motility*: onlinelibrary.wiley.com/doi/10 … 1/nmo.12180/abstract

Provided by University of Adelaide