Gastrin Stimulation Test

An intravenous injection of secretin stimulates gastrin release in patients with gastrinoma (Zollinger-Ellison syndrome) and is useful in establishing the diagnosis in patients whose gastrin levels are within the normal range or only slightly elevated.

The secretin injection is contraindicated in patients with acute pancreatitis. It should be used only if a test dose of 0.1-1.0 CU in patients with atopic allergy and/or asthma fails to result in an allergic reaction. Patients who have had vagotomy, are receiving anticholinergics, or have inflammatory bowel disease may be hyporesponsive to secretin stimulation. Due to lack of research, it should also be avoided in pregnant and lactating women.

All ulcer medications should be discontinued 36 hours before the test, including all H2 blockers (Tagamet, Zantac), anticholinergics (Pro-Banthine, glycopyrrolate, etc.) and antacids (Maalox, Mylanta, Gelusil, Riopan, Amphojel, etc.).

Procedure:
1. The patient should fast for 12 hours prior to beginning the test.
2. A nurse should introduce a heparin lock.
3. Draw two 7 ml red top tubes for gastrin determination prior to the injection of secretin. Label these tubes “Pre-secretin #1 and #2” (test code 217420).
4. Inject Secretin-Kabi, 2 CU per kg body weight, via heparin lock over a one-minute time period.
5. At exactly one minute after secretin is injected, draw the first sample with a syringe and place approximately 7 ml of blood in a red top tube. Label this with one-minute post-secretin (test code 217420).
6. Repeat #5 procedure at exactly two minutes after secretin injection. Label this tube two-minutes post-secretin (test code 217420).
7. Flush heparin lock with saline.
8. At exactly 4.5 minutes after secretin injection, withdraw 5 ml from heparin lock and discard blood. Replace syringe and withdraw a second sample at exactly five minutes and place in red top tube. Label this specimen five minutes post-secretin (test code 2197420).
9. Repeat the flush of heparin lock with saline.
10. At exactly 9.5 minutes after secretin injection, withdraw 5 ml from the heparin lock and discard blood. Replace syringe and withdraw a second sample at exactly 10 minutes; place this specimen in red top tube. Label this specimen 10 minutes post-secretin (test code 2197420).
11. Repeat the flush of heparin lock with saline.
12. At exactly 29.5 minutes after secretin injection, withdraw 5ml from the heparin lock and discard. Replace syringe and withdraw a second sample at exactly 30 minutes; place in a red top tube. Label this specimen 30 minutes post-secretin (test code 2197420).
13. After step 12 the heparin lock may be removed.
14. Centrifuge all blood samples and send frozen serum samples to the laboratory labeled with the appropriate times.

Interpretation:
Results of 120-500 pg/ml and a gastrin rise of 110 pg/ml after secretin infusion strongly suggests gastrinoma.