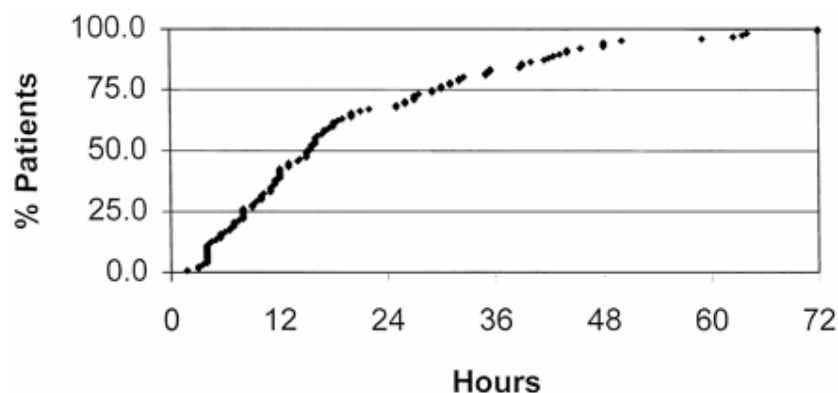


Protocol for the 48 hour fast test for insulinoma:

1. Date the onset of fast as of the last ingestion of calories.
2. Allow the patient to drink calorie free and caffeine free beverages.
3. Ensure that the patient is active during waking hours
4. Measure levels of plasma glucose, insulin, C peptide in the same specimen; repeat measurements every 12 hours. Do the above tests if patient symptomatic of hypoglycaemia anytime during the fast. Request Nurse to monitor BM's 6 hrly but send blood to lab for glucose measurement if ward glucose measurements <3.0 mmol/l.
5. End the fast when the plasma glucose is <2.2 mmol/l and the patient has signs and symptoms of hypoglycaemia. Do not reverse the hypoglycaemia until the lab confirms or unless the patient is unconscious and has fits.
6. At the end of the fast, measure the levels of plasma glucose, insulin, C peptide and sulphonylurea screen.(blood and spot urine sample)
7. If no symptoms during the fast, finish with 15-30 min exercise e.g a brisk walk around the hospital and remeasure.

48 hr vs 72 hr fast:

48 hour fast should replace the 72 hour fast test as in a series of 127 patients with insulinoma, the fast was terminated due to hypoglycemia in 42.5% in 12 hours, 66.9% by 24 hours and 94.5% in 48 hours. 7 patients fasted beyond 48 hours despite subtle neuroglycopenic symptoms and glucose and insulin concentrations were diagnostic of insulinoma. (JCEM Vol 85, No 9, 3222-6, 2000). See graph.



Interpretation:

1. Normals do not become hypoglycemic, although young women can run glucoses in the region of 2.2-3.0 mmol/l without symptoms.

2. True hypoglycemia **must** be demonstrated (glu<2.2 mmol/l) before interpretation of insulin results for the diagnosis of insulinoma.

Thumb rules:

- If hypoglycemia with raised insulin and low C peptide, consider self administration of insulin.
- If hypoglycemia with raised insulin and raised C peptide, make sure the sulphonylurea screen is negative.
- Insulin-glucose ratio is helpful in diagnosis of insulinoma

$$\frac{\text{Insulin (mU/L)}}{\text{Glucose (mmol/L)}}$$

Normal range: insulin/glucose <5

[See Disclaimer](#)