Comenius University in Bratislava, Faculty of Medicine
Institute of Medical Chemistry, Biochemistry and Clinical Biochemistry

LABORATORY PROTOCOL GM-WS - 6th seminar

Oral glucose tolerance test - oGTT

Name, group:	Date:

Principle:

Glucose tolerance test is used to evaluate hormonal regulation of blood glucose level after glucose intake (effect of insulin, which decreases glycemia). A standard dose of glucose is given to a patient and blood samples are taken afterwards to determine how quickly glucose is cleared from blood. The test is usually used for diabetes, insulin resistance or rarer disorders of carbohydrate metabolism.

The most commonly performed version of the test is *oral glucose tolerance test (oGTT)*, in which standard dose of glucose is ingested orally while blood glucose levels are checked before ingesting glucose, 60 and 120 minutes later.

	A_0	A_{60}	A_{120}	B_0	B_{60}	B_{120}	standard	reference
corresponding serum	0.1	0.1	0.1	0.1	0.1	0.1	---	---
standard (0.5 mmol/l)	---	---	---	---	---	---	0.1	---
water (by pipette)	---	---	---	---	---	---	---	0.1
water (in dispenser)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
glucose reagent (in dispenser)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
We let the samples stand for 10-15 minutes and measure absorbance at 500 nm.								

	Patient 1			**Patient 2**			
	A_0	**A_{60}**	**A_{120}**	**B_0**	**B_{60}**	**B_{120}**	**standard**
absorbance							
glucose (mmol/l)							0.5
correction for dilution							---

Reference values (in arterialized capillary blood):

oGTT	0 minutes	60 minutes	120 minutes
normal Glc tolerance	< 7 mmol/l	< 11 mmol/l	< 8 mmol/l
impaired Glc tolerance	< 7 mmol/l	> 11 mmol/l	8-11 mmol/l
diabetes mellitus	> 7 mmol/l	> 11 mmol/l	> 11 mmol/l

Conclusion:

Literature for next week:

Ketone bodies – synthesis and utilization

- Lippincott´s: Chapter 16, Part V: Ketone bodies, formulas: Fig. 16.22.
- Practical exercises in biochemistry (Asklepios, 1993) – Chapter 8. – theoretical part