Bolus method

Numerous methods have been devised to measure ROut.

Bolus method:

A known volume (usually ≈ 4 ml) is injected via LP at a rate of 1 ml/sec

A mathematical model of the cerebrospinal fluid (CSF) system was developed to help clarify the kinetics of the intracranial pressure (ICP). A general equation predicting the time course of pressure was derived in terms of four parameters: the intracranial compliance, dural sinus pressure, resistance to absorption, and CSF formation. These parameters were measured in the adult cat, and the equation was tested by comparing experimental and calculated values of the time course of pressure in response to volume changes. The theoretical and experimental results were in close agreement, and the role of each parameter in governing the dynamic equilibrium of the ICP was determined. From this analysis, dynamic tests were developed for rapid measurement of CSF formation, absorption resistance, and the bulk intracranial compliance. These techniques are applicable to clinical settings, providing data that are useful in characterizing the physiological mechanisms responsible for raised ICP and assessing changes induced by therapy [1].

see Katzman test.

1)
Marmarou A, Shulman K, Rosende RM. A nonlinear analysis of the cerebrospinal fluid system and intracranial pressure dynamics. J Neurosurg. 1978 Mar;48(3):332-44. PubMed PMID: 632857.