

Phenobarbitone

Synonyms

Phenobarbital

Clinical Indication

Phenobarbitone is a second-line drug for partial or tonic seizures and is also used prophylactically in paediatric febrile convulsions. Patients develop tolerance to the drug and monitoring is useful in the following situations:

- to improve compliance
- confirm toxic levels
- minimise drug interaction when other drugs, e.g. valproate, are added
- ensure adequate levels are achieved in prophylaxis for febrile convulsions

In adults phenobarbital is rapidly and completely absorbed from the GI tract. In contrast, newborns receiving oral phenobarbital exhibit delayed and incomplete absorption. Phenobarbital clearance is higher in children compared to adults.

Part of Profile / See Also

Request Form

Combined Pathology manual request form or ICE request

Availability / Frequency of Analysis

Referred test: Analysed by Broomfield Hospital (MEHT [8621](#)) 8if specific criteria met.

Turnaround Time

Two weeks (analysed once a week by the referral laboratory)

Patient Preparation

Because of the long half-life of the drug, little variability is noted in serum phenobarbital concentrations during a dosing interval at steady state therefore blood samples can be obtained at any time of the day.

Sample Requirements

Specimen Type

Serum/lithium heparin plasma

Volume

2 mL

Container



Yellow top (SST) tube



Paediatric lithium heparin (Orange top – Sarstedt)



Paediatric SST (Yellow top – BD Microtainer)

Reference Range & Units

Therapeutic Range: 10 - 40 mg/L

Interferences

The metabolism of phenobarbital is inhibited by felbamate, oxcarbazepine, phenytoin and valproate (serum concentrations will increase).

Interpretation & Clinical

Due to the variability in phenobarbital pharmacokinetics, measuring its concentration can be useful for individualising therapy. Since over time

Decision Value (if applicable)

patients develop tolerance to the sedative effects of the drug, previously intolerable serum concentrations may become tolerable. Therefore the upper limit of the reference range varies considerably, both between and within patients.

References

Patsalos, P (2008) Antiepileptic drugs – best practice guidelines for therapeutic drug monitoring: A position paper by the subcommission on therapeutic drug monitoring, ILAE Commission on Therapeutic Strategies. *Epilepsia* 49:7 1239 - 1276

Test code

PBAR

Lab Handling

Aliquot 500ul and store in referrals rack at 4C. Sent daily by Global courier to Broomfield Hospital.



8621

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ISO 15189:2012