Pseudocholinesterase Deficiency

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Incidence:

Homozygotes: 1 per 2000-5000 (paralysis for hours)
Heterozygotes: 1 per 500 (succinylcholine lasts 10-30 mins to 1 hour)

- harder to diagnosis
- we likely extubate weak people more than we think
- Underdiagnosed
- some cases of awareness under anesthesia

The inherited cause of pseudocholinesterase deficiency is attributed to mutations in the BChE gene located on chromosome 3q26. It is inherited as an autosomal recessive trait and affects approximately 1 in 3,200 to 1 in 5,000 people, and it is more common in the Persian Jewish and native Alaskan ethnicities.

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Dibucaine (amide local anesthetic) Number

In patients with normal pseudocholinesterase, this drug inhibits enzyme activity by 80% (dibucaine number of 80)

- Heterozygotes have a dibucaine number between 40 and 60
- Homozygotes have a number around 20.

- Test: (DO Not in recovery room) wait 2 days after the surgery, 48 hours from drug

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Acquired Causes of Pseudocholinesterase Deficiencies

Medical conditions	Medications
Chronic infections	Cyclophosphamide
Liver disease	Oral contraceptives
Renal disease	MAO inhibitors
Malignancy	Metoclopramide
Major burns	Diethylstilbestrol
Malnutrition	Pancuronium
Pregnancy	Bambuterol (metabolized to terbutaline)
Hypothyroidism	Glucocorticoids

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My patient (they ran pseudocholinesterase total) not dibucaine number but alas it was normal

- Collected: 01/18/22
- Result status: Final
- Resulting lab: MAYO MEDICAL LABORATORY
- Value: SEE NOTE
- Comment:

Test	Result	Flag	Unit	Ref Value
Pseudocholinesterase, Total, S	6153		U/L	4260 - 11250

- Females age 18-41 years who are pregnant or taking hormonal contraceptives, the reference interval is 3650 - 9120 U/L.

Test Performed by:
Mayo Clinic Laboratories - Rochester Main Campus
200 First Street SW, Rochester, MN 55905
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References

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