ACMG
American College of Medical Genetics and Genomics
Translating Genes Into Health®

ACT Sheet

Newborn Screening ACT Sheet

[Decreased galactocerebrosidase, mildly elevated psychosine]

Krabbe Disease (late-onset form)

Differential Diagnosis: Saposin A deficiency.

Condition Description: Krabbe disease (globoid cell leukodystrophy) is a lysosomal disorder caused by deficiency of galactocerebrosidase, resulting in impaired turnover of myelin with subsequent dysfunction and eventual loss of oligodendrocytes and Schwann cells. There is variability in severity and age of onset.

You Should Take the Following Actions:

- Inform family of the newborn screening result.
- Ascertain clinical status (newborns are asymptomatic).
- Consult with a pediatric metabolic specialist.
- Evaluate the newborn (perform physical examination, newborns are expected to be asymptomatic).
- Initiate confirmatory/diagnostic testing, as recommended by the specialist.
- Provide the family with basic information about Krabbe disease and its management.

- Report final diagnostic outcome to newborn screening program.

Diagnostic Evaluation: Leukocyte galactocerebrosidase enzyme assay and measurement of erythrocyte psychosine concentration: Decreased enzyme activity is suggestive of Krabbe disease, but this result alone does not exclude pseudodeficiency, which causes decreased enzyme levels without disease. Combined evaluation of galactocerebrosidase activity and psychosine concentration predict the phenotype (unaffected vs. early vs. late-onset Krabbe disease). Molecular genetic testing can confirm the diagnosis.

Clinical Considerations: This screening result is more likely associated with the late-onset forms of Krabbe disease, but all forms of Krabbe disease are associated with leukodystrophy with age of onset and rate of progression varying widely. The only available therapy is hematopoietic stem cell transplantation that is best performed prior to the onset of clinical symptoms. Gene therapy and other clinical trials may be available. Saposin A deficiency has been described in <10 patients, is clinically very similar to Krabbe disease, and may be detectable by newborn screening.

Additional Information:

How to Communicate Newborn Screening Results
Gene Reviews
Medline Plus
Condition Information for Families- HRSA Newborn Screening Clearinghouse

Referral (local, state, regional, and national):

Find a Genetics Clinic Directory
Genetic Testing Registry

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Local Resources *(Insert Local Website Links)*

State Resource Site (Insert Website Information)

Name	
URL	
Comments	

Local Resource Site (Insert Website Information)

Name	
URL	
Comments	

Appendix *(Resources with Full URL Addresses)*

Additional Information

How to Communicate Newborn Screening Results
- https://www.hrsa.gov/sites/default/files/hrsa/advisory-committees/heritable-disorders/Resources/achdnc-communication-guide-newborn.pdf

Gene Reviews
- https://www.ncbi.nlm.nih.gov/books/NBK1238/

Medline Plus
- https://medlineplus.gov/genetics/condition/krabbe-disease/

Condition Information for Families-HRSA Newborn Screening Clearinghouse
- https://newbornscreening.hrsa.gov/conditions/krabbe-disease

Referral (local, state, regional and national)

Find a Genetics Clinic Directory
- https://clinics.acmg.net

Genetic Testing Registry
- https://www.ncbi.nlm.nih.gov/gtr/