Newborn Screening ACT Sheet

Krabbe Disease (infantile form)

Condition Description: Krabbe Disease (globoid cell leukodystrophy) is a lysosomal disease caused by a deficiency of galactocerebrosidase. The infantile form usually presents before the first year of life. Newborns are asymptomatic and, if untreated, survival beyond age 2 years is uncommon.

Please Take the Following Immediate Actions:

- ☐ **Consult with pediatric metabolic specialist immediately. Specialist will order confirmatory labs** (See attached list)
- ☐ **Contact family to inform them of the newborn screening result.**
- ☐ **Provide the family with basic information about Krabbe Disease and its management.** (See FACT sheet attached)
- ☐ **Report findings to newborn screening program.**
- ☐ **Collect repeat screen (between 7-14 days of life)** if the second screen has not been done.

The only available therapy is hematopoietic stem cell transplantation that is most effective if performed before 30 days of life in patients with the infantile form or prior to the onset of clinical symptoms in the late-onset forms.

The patient should be seen immediately in a Krabbe Referral Center under the care of a pediatric metabolic specialist.

Diagnostic Evaluation: Leukocyte galactocerebrosidase (GALC) 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. The Metabolic Specialist will be collecting these diagnostic tests. Combined evaluation of galactocerebrosidase activity and psychosine concentration predicts the phenotype (unaffected vs. early vs. late onset Krabbe Disease). Molecular genetic testing can confirm the diagnosis.

Clinical Considerations: The clinical presentation of Krabbe Disease ranges from a rapidly progressive infantile form to more slowly progressive later-onset variants. All forms of Krabbe Disease are associated with leukodystrophy, but the age of onset and rate of progression vary widely. 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: https://www.hrsa.gov/sites/default/files/hrsa/advisory-committees/heritable-disorders/Resources/achdnccommunication-guide-newborn.pdf
Krabbe Disease, Gene Reviews: https://www.ncbi.nlm.nih.gov/books/NBK1238/
MedlinePlus: https://medlineplus.gov/genetics/condition/krabbe-disease/
Condition Information for Families- HRSA Newborn Screening Clearinghouse: https://newbornscreening.hrsa.gov/conditions/krabbe-disease
National Organization for Rare Diseases: https://rarediseases.org/rare-diseases/leukodystrophy-krabbes/