

ACT Sheet

Newborn Screening ACT Sheet

[Absent/Reduced Galactose-1-Phosphate Uridyltransferase (GALT)]

Classic Galactosemia

Differential Diagnosis: Duarte variant galactosemia.

Condition Description: Galactosemia refers to a group of disorders which are caused by an inability to metabolize galactose, a sugar found in lactose. Classic galactosemia results from an inherited deficiency of the galactose-1-phosphate uridyltransferase (GALT) enzyme, causing elevated galactose and galactose-1-phosphate. If treatment is not initiated early, life threatening complications can occur. The Duarte variant refers to a diminished ability to break down galactose in childhood.

You Should Take the Following IMMEDIATE Actions:

- Inform family of the newborn screening result
- Ascertain clinical status (poor feeding, vomiting, lethargy, jaundice). Discontinue breast feeding and/or cow's
 milk formulas and initiate non-lactose based feedings with a soy formula.
- Consult with pediatric metabolic specialist the same day.
- Evaluate the newborn (jaundice, poor feeding, vomiting, lethargy, bulging fontanel, and bleeding). If any of these findings are present or if the newborn is ill, transfer to a hospital for further treatment in consultation with the metabolic specialist.
- Initiate confirmatory/diagnostic testing and management, as recommended by specialist.
- Provide family with basic information about classic galactosemia, including dietary management.
- Report final diagnostic outcome to newborn screening program.

Diagnostic Evaluation: Red blood cell GALT activity: Complete or near-complete deficiency in classic galactosemia; partial reduction of normal activity with the Duarte variant. Red blood cell galactose-1-phosphate (gal-1-P): Elevated in both classic and the Duarte variant in patients consuming lactose. Red blood cell assays are not valid following transfusion. Molecular genetic testing may be required to confirm the diagnosis.

Clinical Considerations: Classic galactosemia presents in the first few days of life and may be fatal without treatment. Signs include poor feeding, vomiting, jaundice and may include lethargy and/or bleeding. Neonatal *E. coli* sepsis can occur and is often fatal. The treatment is the avoidance of dairy products and other foods containing galactose, and the administration of soy-based formulas. Symptomatic neonates will require emergency supportive measures. Considered a benign condition, there is no standard accepted management for the Duarte variant; some practitioners restrict high galactose foods in early childhood.

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

This practice resource is designed primarily as an educational resource for medical geneticists and other clinicians to help them provide quality medical services. Adherence to this practice resource is completely voluntary and does not necessarily assure a successful medical outcome. This practice resource should not be considered inclusive of all proper procedures and tests or exclusive of other procedures and tests that are reasonably directed to obtaining the same results. In determining the propriety of any specific procedure or test, the clinician should apply his or her own professional judgment to the specific clinical circumstances presented by the individual patient or specimen. Clinicians are encouraged to document the reasons for the use of a particular procedure or test, whether or not it is in conformance with this practice resource. Clinicians also are advised to take notice of the date this practice resource was adopted, and to consider other medical and scientific information that becomes available after that date. It also would be prudent to consider whether intellectual property interests may restrict the performance of certain tests and other procedures.



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State and Other Resources

State Newborn Screening Program

Nevada Newborn Screening Program, Nevada State Public Health Laboratory 775-682-6238, med.unr.edu/nsphl/newborn-screening

Genetics/Metabolic Consultants

Nicola Longo, MD, PhD, University of Utah Genetics/Pediatrics 801-585-2457, healthcare.utah.edu/fad/mddetail.php?physicianID=u0305101

Information for Clinicians and Families

Nevada Medical Home Portal (see also the Parents & Families section) nv.medicalhomeportal.org/newborn/galactosemia

Parent/Family Support

Galactosemia Foundation www.galactosemia.org

National Resources (with web addresses)

Additional Information

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

Gene Reviews

www.ncbi.nlm.nih.gov/books/NBK1518/

Medline Plus

medlineplus.gov/genetics/condition/galactosemia/

Condition Information for Families-HRSA Newborn Screening Clearinghouse newbornscreening.hrsa.gov/conditions/classic-galactosemia

Referral (local, state, regional and national)

Find a Genetics Clinic Directory clinics.acmg.net
Genetic Testing Registry

Genetic Testing Registry www.ncbi.nlm.nih.gov/gtr/

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