BC Newborn Screening Program Information Sheet

Newborn Screening: Hemoglobin Traits and Benign Variants

Newborn screening in BC includes a screening test to identify those with Sickle cell anemia and related hemoglobin disorders. As a product of this screening program, some newborns are identified who have an atypical hemoglobin pattern that is not associated with a clinical disease state. This may be a hemoglobin trait, meaning that the newborn has one copy of a hemoglobin variant and one copy of normal hemoglobin A (a carrier), or it may be a combination of hemoglobin variants that is generally considered clinically benign. These hemoglobin patterns are not associated with clinical disease state, but could have implications for future reproductive decision making.

Traits:

- Sickle Cell trait
- Hemoglobin C trait
- Hemoglobin D trait
- Hemoglobin E trait
- Other Hemoglobin Variant trait

Combinations:

- Homozygous hemoglobin D
- Hemoglobin D/Beta Thalassemia

Points to discuss with the family (see the accompanying pamphlet)

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- Newborn screening has **not** identified a disorder that requires treatment.
- About 1 in every 200 people carries a variant of hemoglobin.
- Babies carrying one of these variants are no more likely to get sick than other babies.
- No special treatment is required; this will not change into a disease later on.
- In almost all cases at least one parent will also be a carrier for this variant.
- There is a small chance that both parents are carriers which could pose a risk of having a child with a blood disorder in their **next** pregnancy.
- Testing is available to find out if either or both parents carry this hemoglobin variant.

Available Family Testing

Parents and adult family members of these newborns may want to know if they carry a similar trait. First line carrier testing is performed by requesting "**hemoglobinopathy investigations"** through any community laboratory. This blood test will provide a profile of the hemoglobin forms present, and will identify carriers for the hemoglobin variants listed above. Note: carrier testing for these hemoglobin variants does **not** require a molecular (DNA) test.

Available Genetic Counselling (if appropriate)

If you find, following your discussions with the family, that they still have questions regarding the inheritance of these hemoglobin forms and associated reproductive implications, a referral can be made to the Provincial Medical Genetics Program in Vancouver (604-875-2157) or Vancouver Island Medical Genetics in Victoria (250-727-4461).

The BC Newborn Screening Program is a collaboration of BC Women's Hospital & Health Centre, BC Children's Hospital and the BC Perinatal Health Program, all part of the Provincial Health Services Authority.

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Province-wide solutions. Better health.

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