What is Wrong with Sammy ?

Sammy is a 12 year old male who is tall for his age, slender, and a “fast swimmer” on the

team. He seems to do best in sprints (50 Free, and 100 yard events). He is a great supporter of his

peers on the team, and seems to enjoy practice as well as meets. His mother brings him to every

practice. Last weekend, you noted that Sammy did not place at all in the last heat of his two favorite

events. He added several seconds on to each event. He complained about stomach pain and feeling

very tired. Yesterday, he missed practice. You ask his Mother today how Sammy is doing and she

tells you, almost as if she may burst into tears, that “Sammy’s sickle cell disease is flaring up, and he has

been to the doctor’s office twice this week. He may not able to continue swimming. “

Sickle cell disease (also referred to as Sickle cell anemia) is a group of inherited blood disorders.

SCD involves a genetic mutation that alters hemoglobin, the protein in red blood cells that carries

oxygen throughout the body. Children with SCD have hemoglobin proteins that form as stiff rods, that

“bend” the disc-shaped red blood cells into crescent shaped cells, that often get stuck in the small blood

vessels instead of taking oxygen to the capillaries where it can be released into the muscles and organs.

SCD children have short lived red blood cells (last up to 20 days before it bursts), whereas normal red

cells last 90 – 120 days. Therefore , the child has a chronically low red blood cell count , or is anemic.

Anemia causes fatigue and limits the endurance for mid and long distance exercise activities.

School age and adolescent children may compensate remarkably for SCD, by drinking lots of fluid,

participating in a lot of aerobic exercises and having frequent medical checkups. Children may have

“pain crises” where a region of muscle or organ may not be getting enough oxygen due to persistent

blockage of the capillaries by the spindle like sickle red cells , and as this continues the child may

develop severe pain . Such pain may occur as abdominal cramps, severe arm pain, leg pain, or chest

pain. The pain may improve slightly with rest, but in most cases the child should report to their

pediatrician or to the Emergency Room . Treatment includes lots of fluids, acetaminophen, ibuprofen,

and in some cases hydroxyurea (an oral medication) . A severe SCD pain crisis may require a blood

transfusion so the that “normal “ hemoglobin can step in to improve oxygen transport to the target

muscles or organs.

In the United States SCD occurs in approximately 1 out of every 2, 500 births. SCD is more common

in Afro- Americans, native Africans, people of Mediterranean descent, the Arabian peninsula, India, and

in Spanish speaking regions of south and central America. Babies with SCD must have one “sickle cell

gene” from each parent. If only one Sickle cell gene is present in the baby, they will not have SCD.

Youth athletes with SCD should be encouraged to exercise frequently and with longer warmups, and

they should achieve a slow but consistent buildup of muscle mass, mostly by aerobic conditioning. They

must be taught the signs / symptoms of sickle cell crisis, and encouraged to work with their pediatrician

and coach closely to optimize their performance on the track, in the water, or on the playing field.

Swimmers with SCD will have their good days and their bad days, based on where there body is with the

Sickle Cell Disease and overall hydration. **Children with SCD should be encouraged to swim**. Aquatics

programs can provide a great aerobic strength building program for these SCD swimmers and also a

wonderful avenue for peer support .

Submitted by David Strider, RN,CCRN, ACNP, DNP

Chairperson- VSI Disability Committee

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