



Mailbag

DELTA F508/5T-13TG MUTATIONS

Q: I am the mother of a 6 year old boy who has been diagnosed with CF and who is bearing the delta F508/5T-13TG mutations. The result of the sweat test for Chloride was 30-34 mEq/l. The genotyping has been performed in June 2007 following a prolonged episode of cough followed by pneumonia. Until 1.5 years ago my son did not have any symptoms suggestive of CF but since then he had three episodes of pneumonia. He is asymptomatic between the episodes with no maintenance treatment. Pancreatic and other organ function looks normal. He had two inguinal hernia surgical repair interventions (left and right) and the vas deferens was absent on the left side (on the right side the intervention took place before the CF diagnosis and therefore no specific attention was given to this however the surgical protocol was clearly mentioning the presence of the vas deferens on that side).

I would highly appreciate more information on patients bearing this type of mutations (severe/5T). Searching the internet I found out that you could provide a list of web links for lung disease associated with the IVS8 5T. If you could provide this to me it would be very useful.

Thank you in advance for your collaboration and kindness.

A: As everyone knows, it is not possible for CF Worldwide to give advice on any individual case, however much we might want to help. People sometimes think that this is because of legal or ethical problems, and while that is part of the reason, it is not the most important part.

Every patient is different! While we may understand a lot about CF from the studies of the CFTR gene, and other genes that may modify the impact of CF on the affected person, this only tells us "typical behavior". There have been a few people who have the common Delta F508 mutation in both of their CFTR genes, and in spite of this have been healthy right into adult life, with no sign of CF during childhood. There have been a few others who have been very ill indeed, in spite of good treatment and care. Doctors will always treat the patient, not the gene, and use the genetic knowledge as a guide but not like a straitjacket. Our knowledge of the genes provides clues, but every clinic has a few patients who have defied the genetic logic, one way or the other. Let's hope that this boy will continue to be spared many of the possible complications due to CF. If the family is living in Belgium (which I think they are, from the Email address) they have the advantage of access to many excellent paediatricians with great experience treating children living with CF.

What, in general, can we learn from this sort of case? Everyone has two copies of the gene coding for CFTR; if only one is affected by a mutation, the person is a healthy carrier. In this case, one of the two CF genes has the common mutation Delta F508, which (if present on both CFTR genes) is often associated with quite severe disease, with lung and pancreatic symptoms. However, here it is only found in one of the pair of genes. The other gene has a normal coding sequence, but has a control sequence called "5T", which gives a low level of CFTR gene expression. Between 5% and 10% of the general population has "5T", but problems only happen if it is found together with a CF-causing mutation on the other copy of the gene, such as Delta F508. Many children with this combination develop mild CF, with a few problems that usually affect the lung but not digestion.



There is one important general point. Every child with CF walks a thin line between health and illness, and the child and their parents and friends should do everything they can to promote general health as well as strategies for any CF-related health problems. This is very important for children where CF is not obvious; borderline cases will be well most of the time, and the better the child's general health, the more likely he is to avoid CF-related illnesses now and in the future.

Professor Bob Williamson, FRS
University of Melbourne