Published on *My46* (https://www.my46.org) 10/16/2021

My46 Trait Profile

Kabuki syndrome

Kabuki syndrome is a rare genetic condition with characteristic facial features and birth defects. In most cases it is caused by mutations in the KMT2D gene that makes a histone methyltransferase enzyme.

Characteristics of Kabuki syndrome

The characteristic facial features seen in Kabuki syndrome include lateral eversion of the lower eyelids (i.e., the outside edge of the lower eyelid is "pulled" or is turned slightly away from the eye), long eyelashes, arched and broad eyebrows, and large, prominent or cupped ears. Individuals with Kabuki syndrome also tend to have multiple congenital anomalies (i.e., birth defects) such as heart defects, kidney abnormalities, skeletal abnormalities, and cleft lip and/or palate. Other features commonly seen in this condition include feeding difficulties, short stature, increased susceptibility to infections, hearing loss, and dental abnormalities. Individuals with this condition often have mild to moderate intellectual disability.

Diagnosis/Testing

Most individuals with Kabuki syndrome have a change or mutation in a gene called KMT2D that makes a histone methyltransferase enzyme. This enzyme, along with other histone methyltransferases, helps to control the activity of certain genes. Mutations in the KMT2D gene may interfere with the enzyme's normal function and the ability to interact with certain genes that are important for normal development and function.

There are several genetic conditions that have overlapping features with Kabuki syndrome. Additionally, mutations in the KMT2D gene explain the cause of Kabuki syndrome in only about 70% of individuals. This suggests that mutations in other genes might cause Kabuki syndrome or that some individuals with Kabuki syndrome have a different condition instead.

Management/Surveillance

Management of Kabuki syndrome often involves a multidisciplinary group of healthcare providers from specialties such as genetics, cardiology, audiology, ophthalmology, neurology, dentistry, orthopedics, and urology. Physical, occupational, nutritional and educational therapies also may be helpful.

Mode of inheritance

Kabuki syndrome is inherited in an autosomal dominant pattern. This means inheriting one KMT2D mutation is enough for an individual to be affected and show signs of Kabuki syndrome. The mutation can be inherited from an affected parent or it can occur brand new (de novo) in an affected child.

Risk to family members

The risk to family members depends on whether or not an individual with Kabuki syndrome has a parent affected with Kabuki syndrome. If a parent also has Kabuki syndrome, the risk of having a child with Kabuki syndrome is 50% with each pregnancy. If a parent does not have Kabuki syndrome, the risk of future pregnancies being affected is very low.

Special considerations

None

Resources

Kabuki Syndrome Network
http://kabukisyndrome.com/
Supporting Aussie Kids with Kabuki Syndrome
http://www.sakks.org
Genetics Home Reference: Kabuki syndrome
http://ghr.nlm.nih.gov/condition/kabuki-syndrome

References

Adam MP, Hudgins L, Hannibal M. (Updated 1 Sept 2011). Kabuki Syndrome. In: GeneReviews at GeneTests Medical Genetics Information Resource (database online). Copyright, University of Washington, Seattle. 1997-2013. Available at http://www.ncbi.nlm.nih.gov/books/NBK62111 [Accessed 01/14/2013].

Hannibal, M. et al. (2011)."Spectrum of MLL2 (ALR) mutations in 110 cases of Kabuki syndrome." American Journal of Medical Genetics 155A(7): 1511-1516.

Ng, S. et al. (2010)."Exome sequencing identified MLL2 mutations as a cause of Kabuki syndrome." Nature Genetics 42(9): 790-793.

Created: 01/2013 **Created by:** Seema Jamal, MSc, LCGC

Updated: mm/yyyy **Edited by:** Michael Bamshad, MD