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WOL – Wolfram Syndrome

NIHR BioResource – Rare Diseases study project

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Summary

Wolfram syndrome is a rare genetic disease causing childhood onset diabetes and blindness. Children go blind by their mid-teens and the disease is life limiting due to degeneration of the brain. The underlying disease may be a model for more common diseases that cause brain degeneration.

We have laboratory based evidence for the first treatment for the disease, but we do not have anything to measure that will tell us if the treatment is slowing down the disease process. This application is to develop measures (biomarkers) that will allow us to move to clinical trials of new treatments.

Recruitment Criteria

Inclusion

Please refer to the below table outlining the minimum criteria for diagnosis.

Table: Diagnostic criteria for Wolfram

Major criteria	Minor criteria	Minimum required	Other variable suggestive evidence:
-Diabetes mellitus <16 yrs *(87%)* -Optic atrophy <16 yrs *(80%)*	- Diabetes insipidus *(42%)* - Diabetes mellitus >16yrs*(4%)* -Optic atrophy >16 yrs *(7%)* -Sensorineural deafness *(48%)* -Neurological signs (ataxia, epilepsy, cognitive impairment) *(29%)* -Renal tract abnormalities (structural or functional) *(33%)* -1 loss of function mutation in *WFS1/CISD2* AND/OR family history of Wolfram syndrome	-2 major OR -1 major plus 2 minor criteria OR -2 pathological *WFS1* or *CISD2* mutations are identified	- Hypogonadism (males) *(6%)* - Absence of type 1 diabetes auto-antibodies -Bilateral cataracts *(1%)* -Psychiatric disorder *(26%)* -Gastrointestinal disorders *(5%)*

Percentages in parentheses refer to prevalence of feature in EURO-WABB Registry (121 participants with genetically confirmed diagnosis).