Atypical HUS Facts - 2022 September 2023

– Atypical Hemolytic Uremic Syndrome –

Atypical HUS is a rare form of thrombotic microangiopathy (TMA) which impairs kidney function but may also cause damage to organs such as the heart, brain, lungs, GI tract and other systems

Thrombotic microangiopathies (TMA) are clinical syndromes defined by the presence of hemolytic anemia (destruction of red blood cells), low platelets, and organ damage due to the formation of microscopic blood clots in capillaries and small arteries.
*(**John Hopkins Medicine**, https://bit.ly/JHMonTMA)*

Only a handful of people per million have atypical HUS.
Numbers of people with aHUS in any nation are rough estimates, mainly because: countries define 'rare diseases' differently, classification of aHUS varies widely and terms are inconsistent, records and statistics are often calculated differently e.g. those who newly develop aHUS apart from ongoing cases (incidence vs prevalence), aHUS can be mis-diagnosed and is suspected to be under-diagnosed among TMAs.

*(**aHUS Alliance**, https://bit.ly/2020aHUSpatientNumbers)*

Atypical HUS can occur at any age and is often caused by a combination of environmental & genetic factors.

*'**Genetic factors** involve genes that code for proteins that help control the complement system (part of your body's immune system). Environmental factors include certain medications (such as anticancer drugs), chronic diseases (e.g., systemic sclerosis and malignant hypertension), viral or bacterial infections, cancers, organ transplantation, and pregnancy.'*

'In about 60% of aHUS, a genetic change may be identified. The genes associated with genetic aHUS include C3, CD46 (MCP), CFB, CFH, CFHR1, CFHR3, CFHR4, CFI, DGKE, and THBD. Genetic changes in these genes increase the likelihood (predisposition) to developing aHUS, rather than directly causing the disease.'

*(**GARD (USA)**: https://bit.ly/nihGARDatypicalHUS)*

'Extra-renal manifestations of aHUS can involve many organ systems, including the peripheral and central nervous, gastrointestinal, cardiovascular, integumentary, pulmonary, as well as the eye'.

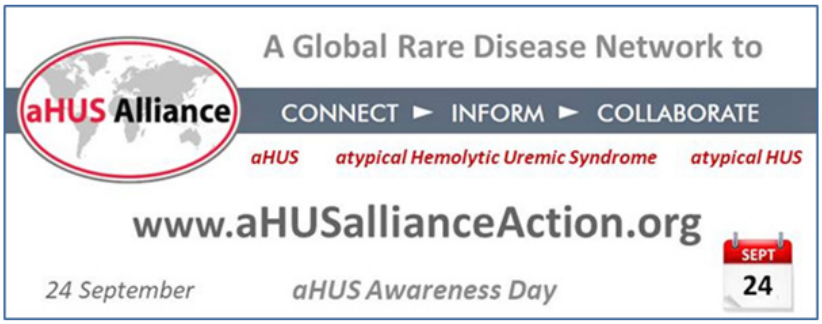
- Neurological symptoms are the most common extra-renal manifestation of aHUS and can occur in 8 to 48% of cases.
- Altered mental status and seizures can result from a variety of causes during the acute and chronic phase of aHUS including hypertension, ischemia, uremia, electrolyte derangements and cerebral edema.
- Diarrhea is a common prodromal (early stage) symptom in patients with aHUS. Treatment refractory IBD (Inflammatory Bowel Disease) and idiopathic pancreatitis can be a presenting symptom of aHUS
- CFH gene mutations and anti-Factor H antibodies have been associated with an increased incidence of extra-renal gastrointestinal and cardiovascular manifestations in patients with aHUS.

*(**Formeck and Swiatecka-Urban**, 2019)*
Extra-renal manifestations of atypical hemolytic uremic syndrome

Patient experiences may vary widely

- aHUS activity is unpredictable, in severity and duration, which may be experienced as a chronic illness or occur as episodes.
- Clot formation consumes red blood cells and platelets, so patients may be anemic or bruise easily. Fatigue and issues such as 'brain fog' (focus, memory) due to poor kidney function can impact both work quality and productivity at school, or during job performance.
- People with aHUS have few outward signs of illness, making it difficult to explain an 'invisible illness' to others. 'Patient burdens' can include lifestyle changes due to treatment or health, economic stress on the family, mental health or relationship concerns, and changes in abilities (both physical or cognitive)
- A TMA team approach for complex medical care can monitor potential aHUS impact on multiple organs. Specialists most often seen are nephrologists and hematologists.
- Almost two-thirds of aHUS patients are misdiagnosed, with 13% of patients remaining misdiagnosed for more than a year. *(Report 3, aHUS Alliance 2021 poll)*
- 66% of aHUS patients needed specialist care after their first visit, with 54% of patients entered directly into intensive care after seeking primary care medical advice. *(Report 2, aHUS Alliance 2021 poll)*

*(**aHUS Alliance**, 2021 Poll Reports https://bit.ly/2021aHUSPollData)*



Only about 5% of rare diseases have an approved therapeutic. While aHUS is among, drug access is restricted or not available at all in the majority of nations. https://bit.ly/aHUS2022drugReview

There is no single test for atypical HUS, rather it's a 'diagnosis of exclusion' after medical conditions with similar characteristics are ruled out with aHUS as the remaining diagnosis.

Differences in aHUS patient clinical presentations, as well as varied names and classification, make diagnosis difficult and information flow fragmented.

Learn MORE at the aHUS Alliance Info Centre

Noris M, Bresin E, Mele C, et al. Genetic Atypical Hemolytic-Uremic Syndrome. GeneReviews® [2021 Sep 23].

Atypical HUS Research: Listed by Categories: Diagnosis, Treatment, Pregnancy, TMA, Genetics, more

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