

# Atypical HUS: In Brief

## Atypical Hemolytic Uremic Syndrome - a Rare Disease

2018 - 2019 EDITION



### About aHUS

- Atypical Hemolytic Uremic Syndrome (aHUS) is a very rare, chronic and life-threatening genetic condition
- aHUS can occur at any age, with roughly 60 percent of children affected and 40 percent adults <sup>2</sup>
- aHUS is caused by chronic, uncontrolled activation of the complement system, a part of the body's natural immune system <sup>1</sup>
- As a result, the immune system attacks the body's unhealthy and healthy cells, which can cause abnormal blood clotting and blood vessel damage <sup>2,3</sup>
- The presence of blood clots causes damage to organs, leading to heart attack, stroke, kidney failure and death <sup>2</sup>
- Death rates amongst aHUS patients are as high as 25 percent, and progression to end-stage kidney disease occurs in more than 50 percent of patients <sup>2,5</sup>
- Kidneys are often transplanted in aHUS patients with permanent kidney failure, however, the disease recurs in 60 per cent of patients, and more than 90 per cent of patients experience failure of transplanted kidney <sup>2</sup>

### Diagnosis

- Atypical HUS encompasses a group of diseases that share in the clinical features of a microangiopathic hemolytic anemia associated with thrombocytopenia and renal failure. <sup>25</sup>
- The causes of aHUS are not fully understood, but in 70 per cent of cases it is associated with an underlying genetic or acquired abnormality of the complement system <sup>10</sup>
- During initial onset of aHUS, or during recurring episodes, tell-tale signs can be detected from lab findings relating to <sup>9</sup>
  - platelet levels
  - hemoglobin and haptoglobin levels
  - creatinine levels
  - BUN (blood urea nitrogen) levels

Orphanet: Collaboration of aHUS Registry & Alliance <https://bit.ly/2FL42sR>

Know aHUS: <https://bit.ly/2xBinIU>

aHUS Awareness Day is 24 September

## Symptoms

- aHUS disease can be characterized by three key features:<sup>12</sup>
  - thrombocytopenia (low platelet count in the blood)
  - anemia (low red blood cell/platelet count in the blood)
  - kidney symptoms (starting as acute kidney failure but can progress to end-stage kidney disease)
- There are a number of symptoms secondary to kidney failure, which include <sup>10</sup>
  - nausea and vomiting
  - confusion
  - shortness of breath (dyspnea)
  - fatigue

## Treatment

### *Plasma Therapy & Dialysis*

- The prognosis for patients with aHUS is very poor,<sup>13</sup> with existing supportive therapies unproven and unreliable
- The management of aHUS has relied on plasma infusion and plasma exchange therapies with variable results<sup>14</sup>
- To date, there have been no well-controlled trials that show plasma exchange or plasma infusion to be safe or effective in aHUS<sup>15</sup>
- In studies where the majority of patients with aHUS were treated with plasma therapy, patient outcomes were reported as being poor<sup>16</sup>
- Dialysis cannot completely compensate for the loss of kidney function, and can lead to deadly infections and shortened life expectancy <sup>17</sup>

### *Treatment- Therapeutics*

- Eculizumab has shown greater efficacy than plasma therapy in the prevention and treatment of aHUS<sup>16, 19</sup>
- Switching from plasma therapy to eculizumab has been shown to improve renal function even in patients with long-lasting and stable chronic kidney disease <sup>16</sup>
- KDIGO Controversies Conference on aHUS and C3G: See *Treatment Strategies, Section V*. Goodship et al, Dec 2016. Kid. Intl. <http://ow.ly/DCjf30euh7n>
- aHUS Alliance – aHUS Therapeutic Drugs, R & D, with tables. May 2018 <https://bit.ly/2xpfq0T>
- Clinical Trials – As of Sept 2018 on ClinicalTrials.gov: 24 Studies for ‘atypical HUS’ <https://bit.ly/2QIz1Zl> and 308 Studies listed under ‘thrombotic microangiopathy’ or TMA <https://bit.ly/2QIz1Zl>

### *Access to Treatment*

- As of Sept 2018 aHUS patients in many nations still do not have access to eculizumab, and coverage within some of those countries is further restricted: dependent on the aHUS patient’s location within their nation or their individual health status <sup>26</sup>. In 2018: **Global Panel for aHUS Drug Access** <https://bit.ly/2MKPIQQ>
- Inequality in Treatment Options among Nations - Access to eculizumab for treatment of aHUS patients worldwide plummets from 77% to only 37% for poll respondents in nations outside of the US & EU. <sup>28</sup> (White Paper at <http://ow.ly/Dbzb303ZqhU>, with 2016 aHUS Poll Results: <http://ow.ly/1DA7303FoJx> )

*Note: The aHUS Alliance wishes to extend thanks to aHUS Canada for their efforts in providing core facts here. For Citations & More Info, see the Full Version of this Document: **aHUS Key Facts & Information***

**NIH NCBI GeneReview: Genetic Atypical Hemolytic-Uremic Syndrome** <http://ow.ly/CmhB30euQTi>

