

Waterhouse-Friderichsen Syndrome

Waterhouse-Friderichsen syndrome is usually caused by *Neisseria meningitidis* infection, and is defined as 1° adrenal failure due to massive adrenal hemorrhage. This syndrome is also associated with septicemia, DIC and hypotension leading to endotoxic shock.



PLAY PICMONIC

Acute 1° Adrenal Insufficiency

(1) Wand Acute-angle in Damaged Adrenal-gland

This syndrome is defined by rapidly developing adrenocortical insufficiency caused by massive hemorrhage. Patients typically show hypoglycemia, hyponatremia, and hyperkalemia, along with adrenal failure in the ACTH stimulation test.

Adrenal Hemorrhage

Adrenal-gland with Hammer-hemorrhage

Waterhouse-Friderichsen syndrome involves massive adrenal hemorrhage, which often occurs bilaterally. This hemorrhagic adrenalitis is typically caused by tubercular infection of the adrenal glands by the bacterium *Neisseria meningitidis*.

Hypotension

Hippo-BP

As a combined result of 1° adrenal failure and massive hemorrhage, patients display hypotension, which can rapidly progress to septic shock.

Neisseria meningitidis

Knife Men-in-tights

Neisseria meningitidis is a common cause and association with Waterhouse-Friderichsen Syndrome (WFS), as it can acutely and selectively affect the adrenals. *Pseudomonas*, *Haemophilus*, and *Staphylococcus aureus* can also be associated with WFS.

DIC

Dice

Disseminated Intravascular Coagulation (DIC) is another common association with Waterhouse-Friderichsen Syndrome (WFS). Patients develop purpura and petechiae and can display alterations of PT and PTT, further suggesting DIC with this syndrome.