

microangiopathy are seen, a coagulopathy predominates, with consumption of clotting factors and fibrinogen resulting in an elevated prothrombin time (PT) and often activated partial thromboplastin time (aPTT). The PT and aPTT are characteristically normal in TTP or HUS.

Thrombotic Thrombocytopenic Purpura TTP was first described in 1924 by Eli Moschcowitz and characterized by a pentad of findings that include microangiopathic hemolytic anemia, thrombocytopenia, renal failure, neurologic findings, and fever. The full-blown syndrome is less commonly seen now, probably due to earlier diagnosis. The introduction of treatment with plasma exchange markedly improved the prognosis in patients, with a decrease in mortality from 85–100% to 10–30%.

The pathogenesis of inherited (Upshaw-Schulman syndrome) and idiopathic TTP (ITTP) is related to a deficiency of, or antibodies to, the metalloprotease ADAMTS13, which cleaves VWF. VWF is normally secreted as ultra-large multimers, which are then cleaved by ADAMTS13. The persistence of ultra-large VWF molecules is thought to contribute to pathogenic platelet adhesion and aggregation ([Fig. 115-4](#)). This defect alone, however, is not sufficient to result in TTP because individuals with a congenital absence of ADAMTS13 develop TTP only episodically, including during first pregnancy. The level of ADAMTS13 activity, as well as antibodies to ADAMTS13, can be detected by laboratory assays, which play a critical role in the differential diagnosis of MAHA. ADAMTS13 activity levels of <10% are diagnostic of TTP.