Ticlopidine-, clopidogrel-, and prasugrel-associated thrombotic thrombocytopenic purpura: a 20-year review from the Southern Network on Adverse Reactions (SONAR).

Abstract:

Thienopyridine-derivatives (ticlopidine, clopidogrel, and prasugrel) are the primary antiplatelet agents. Thrombotic thrombocytopenic purpura (TTP) is a rare drug-associated syndrome, with the thienopyridines being the most common drugs implicated in this syndrome. We reviewed 20 years of information on clinical, epidemiologic, and laboratory findings for thienopyridine-associated TTP. Four, 11, and 11 cases of thienopyridine-associated TTP were reported in the first year of marketing of ticlopidine (1989), clopidogrel (1998), and prasugrel (2010), respectively. As of 2011, the FDA received reports of 97 ticlopidine-, 197 clopidogrel-, and 14 prasugrel-associated TTP cases. Severe deficiency of ADAMTS-13 (a disintegrin and metalloproteinase with a thrombospondin type 1 motif, member 13) was present in 80% and antibodies to 100% of these TTP patients on ticlopidine, 0% of the patients with clopidogrel-associated TTP. TTP is associated with use of each of the three thienopyridines, although the mechanistic pathways may differ.