Antithrombotic agent

Classification

Antiplatelet drugs limit the migration or aggregation of platelets.

Anticoagulants limit the ability of the blood to clot.

Thrombolytic drugs act to dissolve clots after they have formed.

An antithrombotic agent is a drug that reduces the formation of blood clots (thrombi).

Antithrombotics can be used therapeutically for prevention (primary prevention, secondary prevention) or treatment of a dangerous blood clot (acute thrombus). In the U.S., the American College of Chest Physicians publishes clinical guidelines for clinicians for the use of these drugs to treat and prevent a variety of diseases.

Different antithrombotics affect different blood clotting processes:

Antiplatelet drugs limit the migration or aggregation of platelets.

Anticoagulants limit the ability of the blood to clot.

Thrombolytic drugs act to dissolve clots after they have formed.

Antithrombotic medication has proven efficacy in the treatment and prevention of cardiovascular and cerebrovascular diseases.

Guidelines for antithrombotic therapy for the treatment of venous thromboembolism (VTE), developed in 2001 by the Sixth American College of Chest Physicians (ACCP), state that patients with acute VTE should be treated with low molecular weight heparin, unfractionated intravenous heparin, or adjusted-dose subcutaneous heparin.

Intracerebral hemorrhage recurrence risk is poorly documented and the knowledge of potential predictors for recurrence among co-morbidities and medicine with antithrombotic effect is limited.

In ischemic stroke or patients with TIA less than five cerebral microbleeds (CMBs) should not affect antithrombotic decisions, although with more than five CMBs the risks of future ICH and ischaemic stroke are finely balanced, and antithrombotics might cause net harm. In lobar ICH populations, a high burden of strictly lobar CMBs is associated with cerebral amyloid angiopathy (CAA) and high ICH risk; antithrombotics should be avoided unless there is a compelling indication [1)].

In view of their age and vascular co-morbidities, people are often taking an antithrombotic drug when diagnosed with chronic subdural hematoma (CSDH). It is unclear whether antithrombotic use at CSDH

diagnosis, or resumption afterwards, is associated with recurrent CSDH or vaso-occlusive events.

Poon et al. systematically reviewed the literature for studies reporting CSDH recurrence or vaso-occlusive events after drainage of CSDH associated with antithrombotic drug use.

They searched Medline 1946-2016 and Embase 1974-2016 inclusive for cohort studies reporting the risk of CSDH recurrence or vaso-occlusive events after CSDH associated with antithrombotic (anticoagulant or antiplatelet) drug use.

They meta-analysed outcome data using a random effect model and assessed inconsistency between studies using the I-squared (I 2) statistic. They found 20 studies reporting outcome after drainage of CSDH associated with antithrombotic drug use. Before CSDH drainage, 337 (11.5%) of 2941 patients in 12 studies used an anticoagulant drug and 600 (19%) of 3150 patients in 11 studies used an antiplatelet drug. The association between antithrombotic drug use and CSDH recurrence was significant for antiplatelet drug use (relative risk [RR] 1.36, 95% CI 1.05 to 1.75; I 2 = 36.3%), but marginally significant for anticoagulant drug use (RR 1.38 95% CI 1.00-1.91; I 2 = 37.5%). Two studies including 30 patients reported one vaso-occlusive outcome event after CSDH. Antithrombotic drug use at CSDH diagnosis may be associated with post-operative CSDH recurrence. It is unclear whether this is attributable to confounding factors, antithrombotic reversal strategies or antithrombotic drug resumption. Further observational studies and randomised controlled trials of antithrombotic drug resumption are needed [2].

1)
Wilson D, Werring DJ. Antithrombotic therapy in patients with cerebral microbleeds. Curr Opin Neurol. 2016 Nov 24. [Epub ahead of print] PubMed PMID: 27898582.
2)
Poon MTC, Al-Shahi Salman R. Association between antithrombotic drug use before chronic subdural haematoma and outcome after drainage: a systematic review and meta-analysis. Neurosurg Rev. 2017 May 26. doi: 10.1007/s10143-017-0860-x. [Epub ahead of print] PubMed PMID: 28550627.