



Significant Role of Anti Thrombotic Therapy to Treat Thrombosis

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DESCRIPTION

A clot, or thrombus, can impede the smooth flow of blood through arteries and veins, which can have serious consequences and even result in death. Blood normally flows through arteries and veins smoothly and effectively. Heart attack and stroke are two illnesses brought on by blood vessel clots. In the developed world, these illnesses jointly make up the vast majority of deaths and disabilities. A medication known as an antithrombotic agent works to prevent blood clots from forming (thrombi). Antithrombotic can be used therapeutically to treat or prevent a harmful blood clot (primary prevention, secondary prevention) (acute thrombus). Various antithrombotic have an impact on various blood coagulation mechanisms:

- Antiplatelet medications prevent platelets from migrating or aggregating.
- Anticoagulants reduce the blood's capacity to clot.
- Thrombolytic medications work to dissolve clots that have already formed.

Venous Thromboembolism (VTE) in pregnancy is frequently prevented and treated with antithrombotic medication. Low Molecular Weight Heparin (LMWH) is preferable in these circumstances over either unfractionated heparin or oral anticoagulants. In comparison to unfractionated heparin, LMWH is safer, simpler to administer, and, at least in patients who are not pregnant, just as effective for preventing and treating VTE. This chapter examines the pharmacology of LMWH in pregnancy, lists the pregnant patients who should take heparin, and discusses the research supporting the safety of LMWH use.

In patients with chronic occlusive or Nonocclusive Intracranial Vertebral Artery Disease (ICVA), antithrombotic therapy is a recognised first-line treatment. Anticoagulants have been prescribed for a few weeks or months to patients with acute occlusive ICVA disease or dissections and have been deemed safe by skilled stroke clinicians, though there is not yet enough information to determine their effectiveness. After the findings

of the Stenting and Aggressive Medical Management for Preventing Recurrent Stroke in Intracranial Stenosis (SAMMPRIS) trial were published, stenting was rarely advised because patients who received the most aggressive medical therapy fared better than those who received stent placement.

Antithrombotic therapy has made a big difference in a number of important ways. Because heparin prevents clotting in external tubing, it is now possible to do bypass surgery and dialysis. The risk of deep vein thrombosis, often known as DVT, a condition that can result in pulmonary embolism (a clot that plugs an artery to the lungs), which can be fatal, has been decreased by more than 70% because to antithrombotic medication. Most importantly, it has significantly decreased the risk of major stroke in patients with mini-strokes, the risk of stroke in those with heart abnormalities (atrial fibrillation), and the death rate from heart attacks.

Aggregated platelets, fibrin, and trapped blood cells make up all thrombi, however the ratio of these elements varies between arterial and venous thrombi. In contrast to fibrin, which predominates in venous thrombi because they develop in areas of lower blood flow, platelets predominate in arterial thrombi, which originate in high shear circumstances. Therapy is informed by these variations. Antiplatelet therapy is therefore presently the cornerstone for the prevention and treatment of arterial thrombosis, whereas anticoagulants are the cornerstone for VTE.

The main adverse effect of antithrombotic treatment is bleeding. In comparison to aspirin alone, Dual Antiplatelet Treatment (DAPT) with aspirin and clopidogrel increases the risk of severe bleeding by about 1.8 times. Likewise, when aspirin is used with an anticoagulant, the risk of bleeding rises by at least a 2-fold. Although vitamin K antagonists like warfarin are more likely to cause significant bleeding than Direct Oral Anticoagulants (DOACs), which include dabigatran, apixaban, edoxaban, and rivaroxaban, the risk of bleeding nearly doubles when the DOACs are taken with aspirin. Thus, the need for safer anticoagulant therapy still exists.

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