DIC What is it? What causes DIC? How is it diagnosed? What is the treatment?

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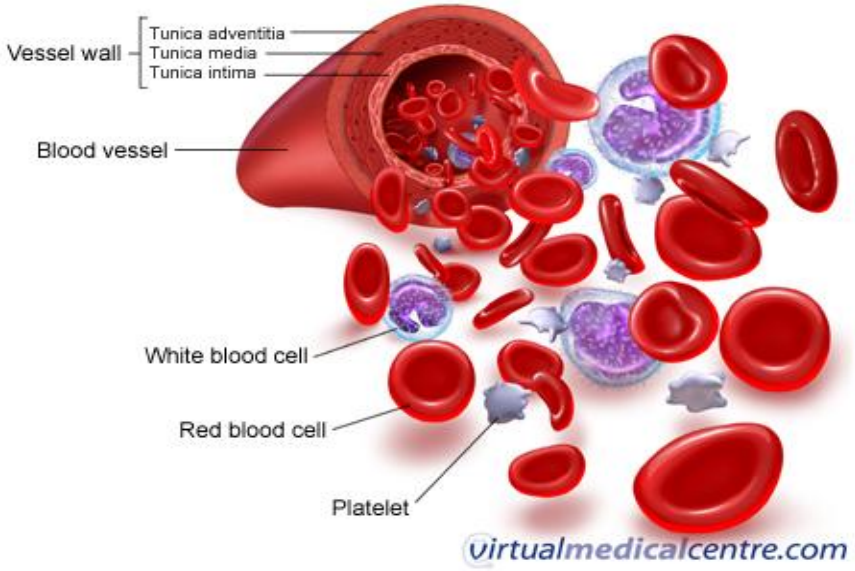
Disseminated intravascular coagulation (**DIC**), also known as **consumptive coagulopathy**
a pathological activation of coagulation mechanisms.



As its name suggests, it leads to the formation of small blood clots inside the blood vessels throughout the body.

As the small clots consume all the available coagulation proteins and platelets, normal coagulation is disrupted and abnormal bleeding occurs from: a break in skin integrity, the digestive tract, respiratory tract and surgical wounds.

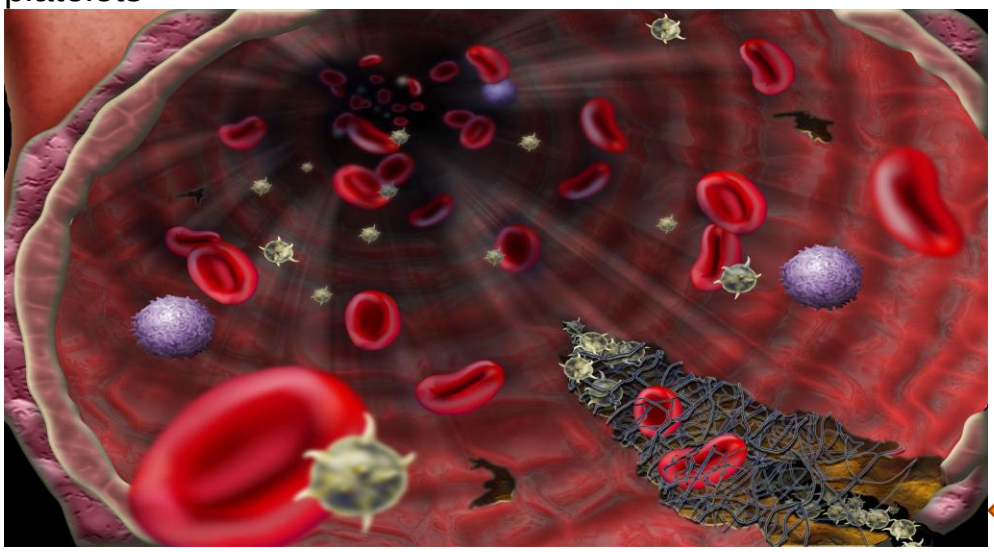
The small clots disrupt normal blood flow to organs, causing a risk of multi-system failure.

What causes DIC?

In DIC, the processes of coagulation and fibrinolysis lose control, and the result is widespread clotting with resultant bleeding (access Wikipedia .com for coagulation mechanism review).

One critical mediator of DIC is the release of a trans-membrane glycoprotein called tissue factor (TF).

TF is best known as the primary cellular initiator of blood coagulation. After vessel injury, the TF:FVIIa complex activates the coagulation protease cascade, which leads to fibrin deposition and activation of platelets



clot

TF is abundant in tissues of the lungs, brain, placenta, some cancers, bacteria, viruses and toxins (snake venom).

This helps to explain why DIC readily develops in patients with extensive trauma.

Upon activation, TF binds with coagulation factors that then trigger both the intrinsic and the extrinsic pathways of coagulation.

Signs and symptoms

The affected person often has a pre-existing condition including:

- Cancers such as lung, pancreatic and stomach to name a few,
- abruptio placenta,
- pre-eclampsia,
- amniotic fluid embolism
- Massive tissue injury:
- Trauma, burns,
- extensive surgery
- Infections: Gram-negative sepsis
- malaria,
- Rocky mountain spotted fever
- Liver disease,
- snake bite,
- giant hemangioma,
- shock,
- heat stroke,
- vasculitis,
- aortic aneurysm,
- Serotonin syndrome[8]
- Argentine hemorrhagic fever
- Bolivian Hemorrhagic Fever

Patient may present with:

- Wide spread bleeding (from thee mouth, nose and venipuncture sites)
- Excessive bruising
- Gangrene
- Sudden symptoms of shock (endo-toxins/amniotic fluid embolism)
- Or a chronic condition that worsens over time (carcinomas)

What is the treatment?

The only effective treatment is the reversal of the underlying cause.

. Anticoagulants are given rarely because of possible thrombus

Platelets can be given if counts are less than 5,000-10,000/mm^3 and fresh frozen plasma may be administered in an attempt to replenish coagulation factors and anti-thrombotic factors, but, these measures can result in the increased development of thrombosis.

In some situations, infusion with antithrombin may be necessary.

Prognosis

The prognosis is not very good for the patient in which the underlying condition cannot be resolved. The cascading effect of DIC causes multi-system failure and death ensues.

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