

Aortadisseksjon

Fagdag Hoved- og thoraxintensiv

10.01, 24.01, 07.02 og 28.02.23

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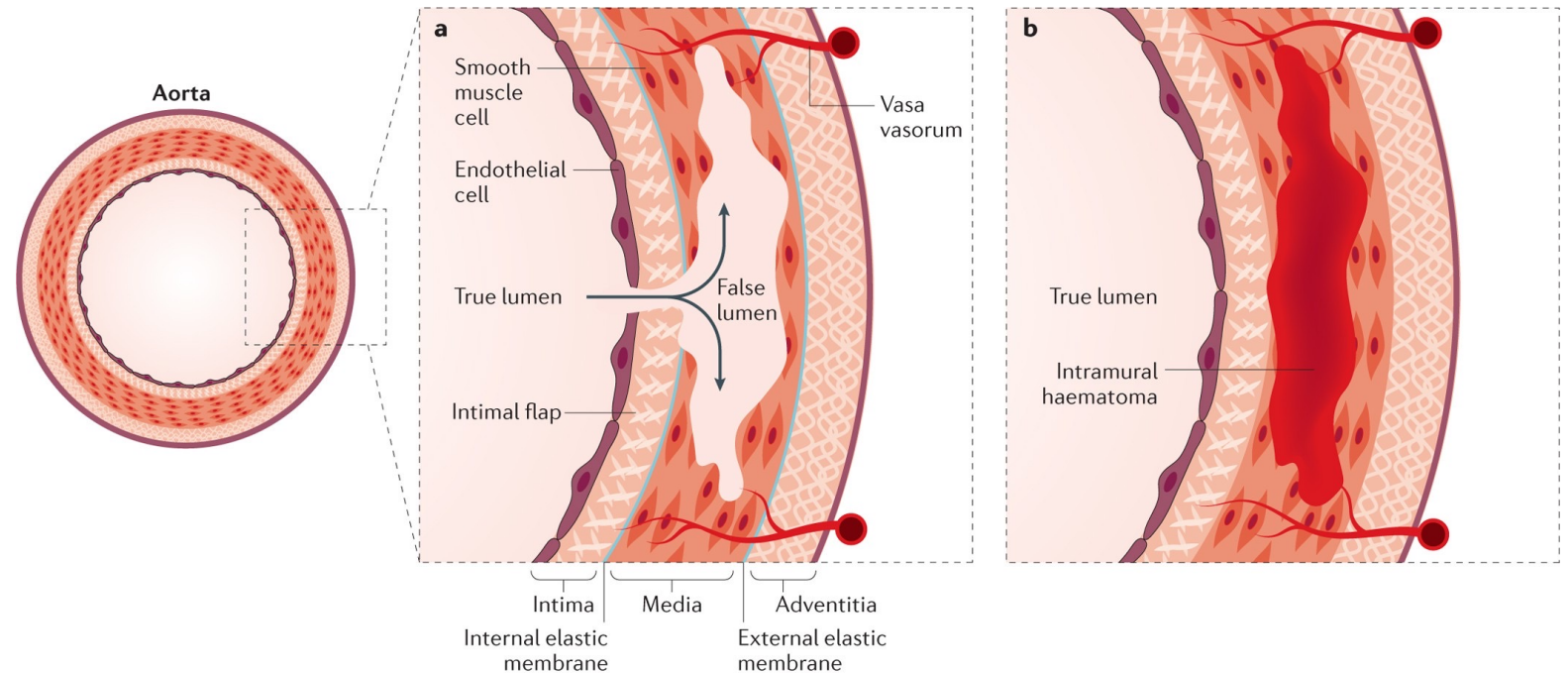
Overlege/førsteamanuensis St Olavs Hospital/NTNU

Take home messages

1. Aortadisseksjon = lagene i aorta deler seg
2. A-dis = aorta ascendens er involvert
3. Komplikasjoner er AORTIC
4. A-dis opereres i DHCA
5. Postoperativ blødning er en utfordring
6. Andre komplikasjoner er sirkulasjonssvikt, hjerteinfarkt, hjerneinfarkt og bukiskemi

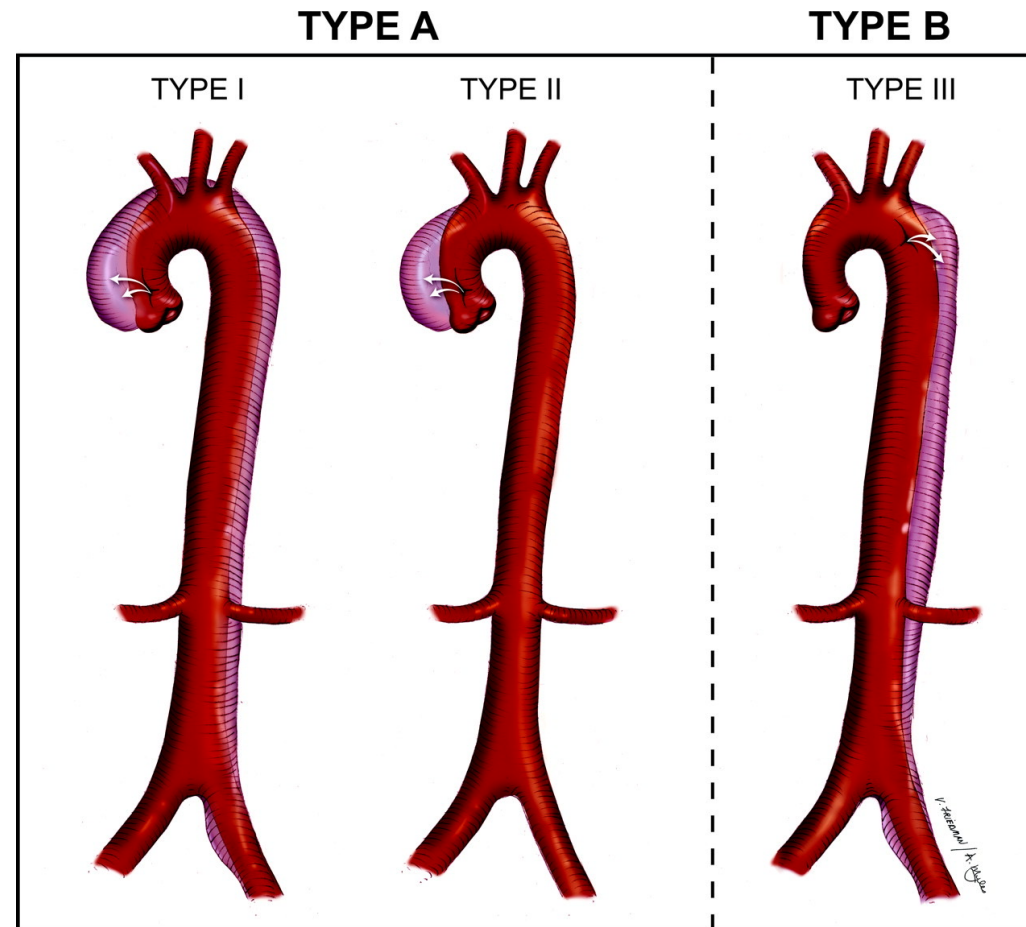
1. Aortadisseksjon = lagene i aorta deler seg

Aortic dissection is a life-threatening condition caused by a tear in the intimal layer of the aorta or bleeding within the aortic wall, resulting in the separation (dissection) of the layers of the aortic wall.



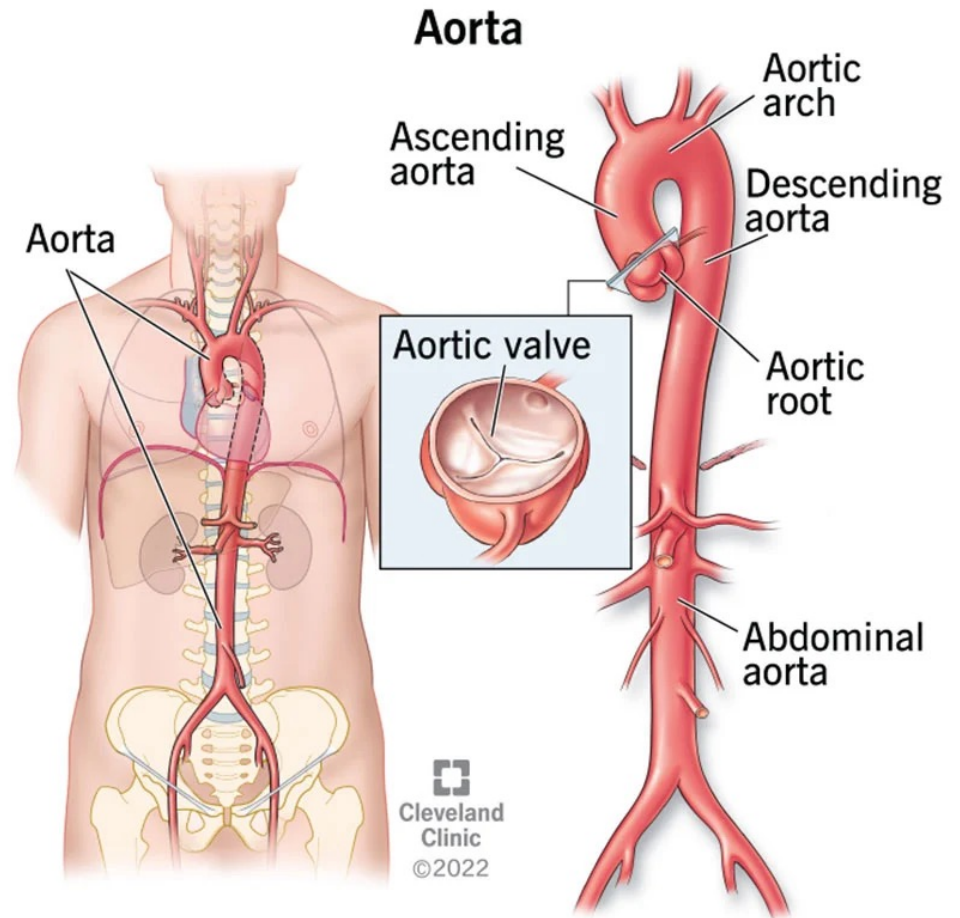
Nature Reviews | Disease Primers

2. A-dis = aorta ascendens er involvert

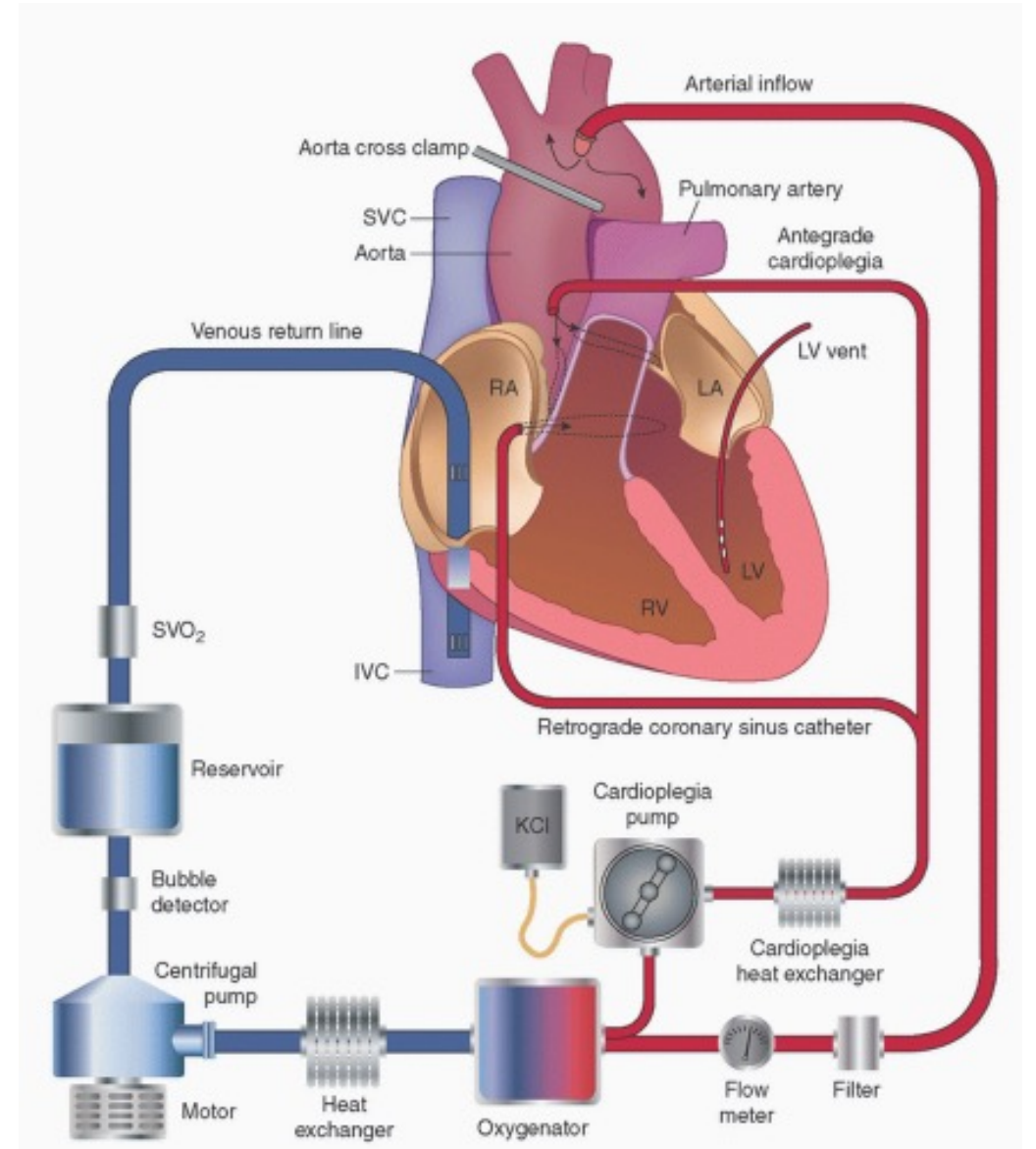
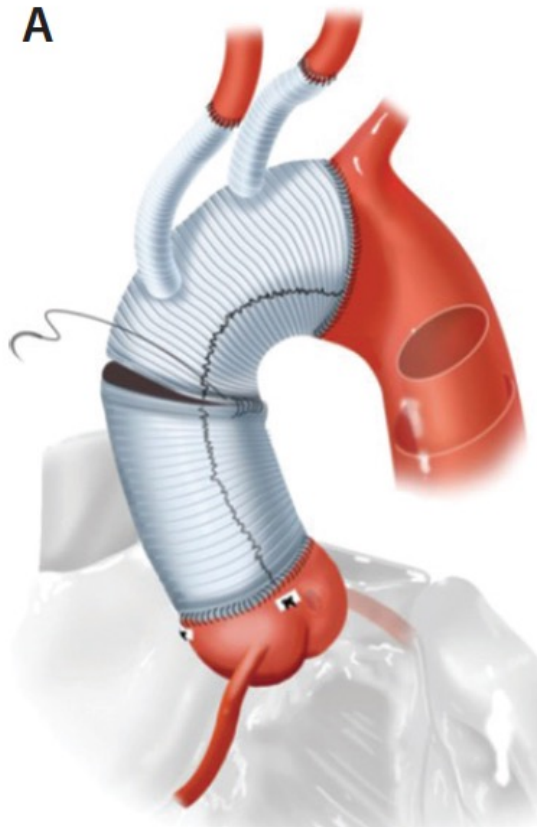


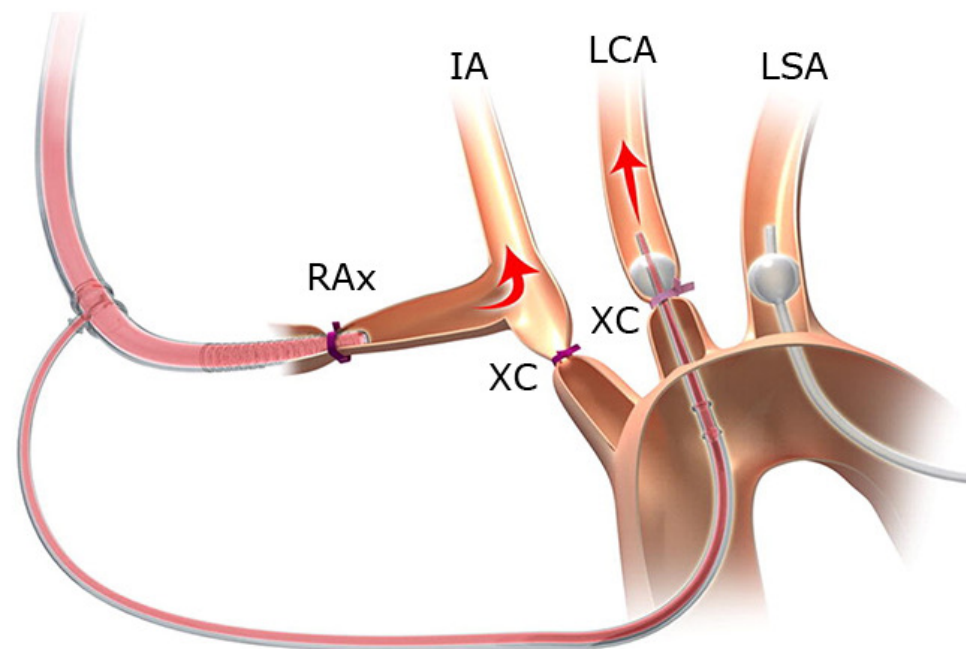
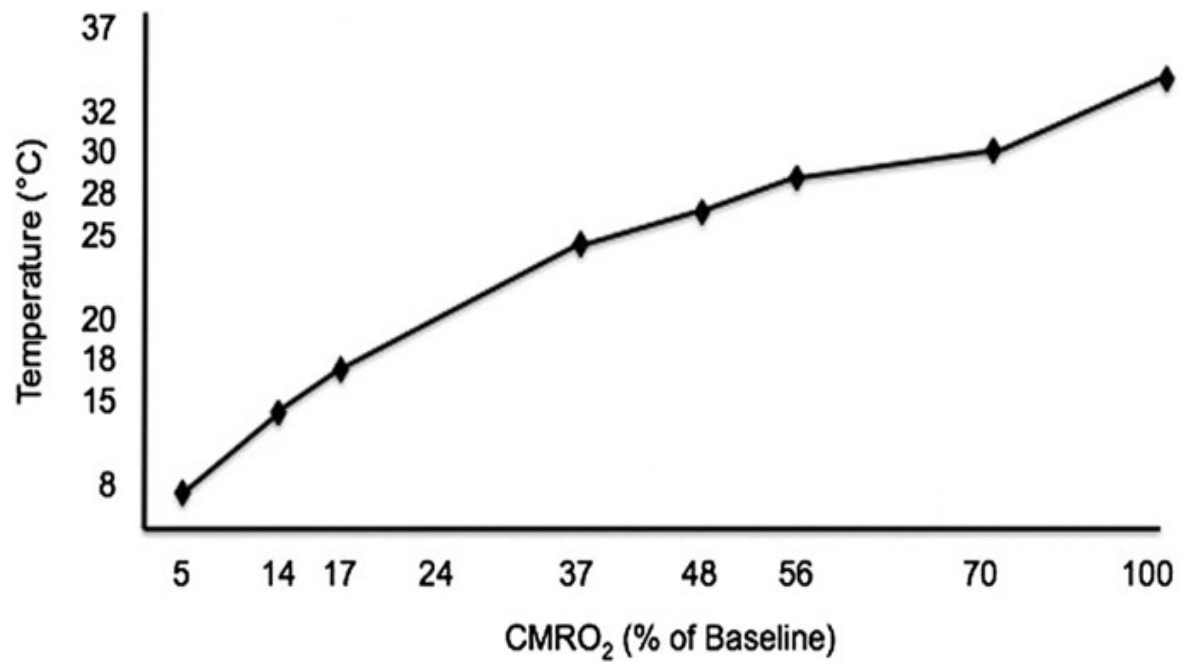
3. Komplikasjoner er AORTIC

- A: Aortic insufficiency
- O: Occlusion of coronary artery
- R: Rupture
- T: Tamponade
- I: Ischemia of viscera
- C: CVA



4. A-dis opereres i DHCA





5. Postoperativ blødning er en utfordring

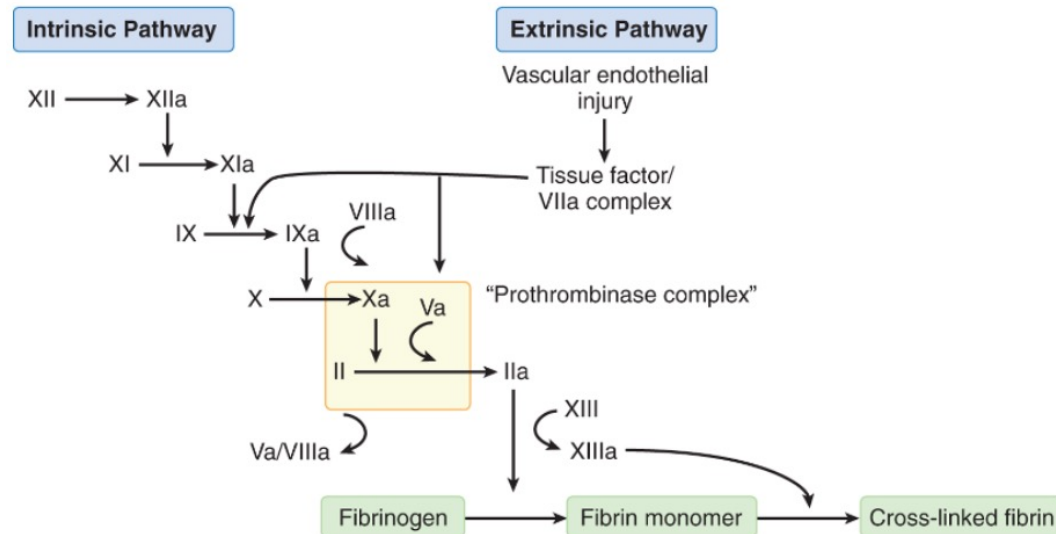
Original Article

The Coagulopathy of Acute Type A Aortic Dissection: A Prospective, Observational Study



Measurements and Main Results: Platelet count and levels of fibrinogen, D-dimer, prothrombin time/international normalized ratio, activated partial thromboplastin time, and antithrombin were analyzed perioperatively and compared between the 2 groups. Patients with ATAAD had lower preoperative levels of platelets ($188 [156-217] \times 10^9/L$ v $221 [196-240] \times 10^9/L$; $p = 0.018$), fibrinogen ($1.9 [1.6-2.4]$ g/L v $2.8 [2.2-3.0]$ g/L; $p = 0.003$), and antithrombin ($0.81 [0.73-0.94]$ kIU/L v $0.96 [0.92-1.00]$ kIU/L; $p = 0.003$) and significantly higher levels of D-dimer ($2.9 [1.7-9.7]$ mg/L v $0.1 [0.1-0.2]$ mg/L; $p < 0.001$) and prothrombin time/international normalized ratio ($1.15 [1.1-1.2]$ v $1.0 [0.93-1.0]$; $p = 0.001$). Surgery caused significant changes of the coagulation system in both groups. Intraoperative bleeding volumes were larger in the ATAAD group ($2,407 [1,804-3,209]$ mL v $1,212 [917-1,920]$ mL; $p < 0.001$), and patients undergoing ATAAD surgery received significantly more transfusions of red blood cells ($2.5 [0.25-4.75]$ U v $0 [0-2.75]$ U; $p = 0.022$), platelets ($4 [3.25-6]$ U v $2 [2-4]$ U; $p = 0.002$), and plasma ($2 [0-4]$ U v $0 [0-0]$ U; $p = 0.004$) compared with the elective group.

Conclusions: This study demonstrates that ATAAD is associated with a coagulopathic state. Surgery causes additional damage to the hemostatic system in ATAAD patients, but also in patients undergoing elective surgery of the ascending aorta or the aortic root.



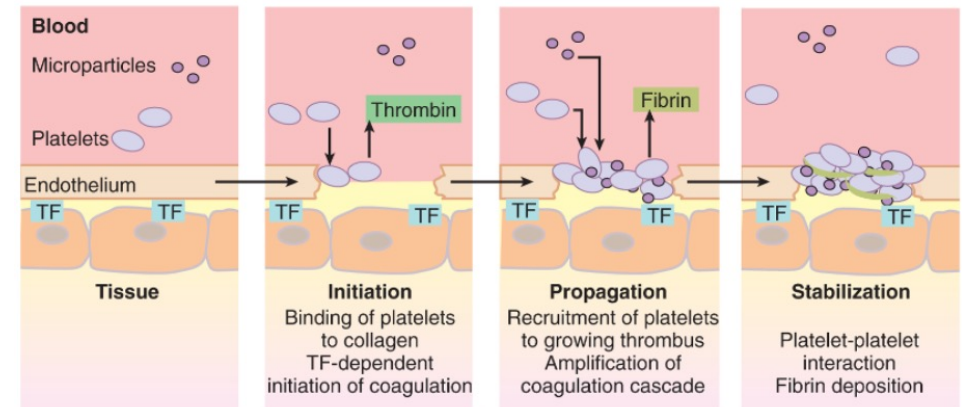
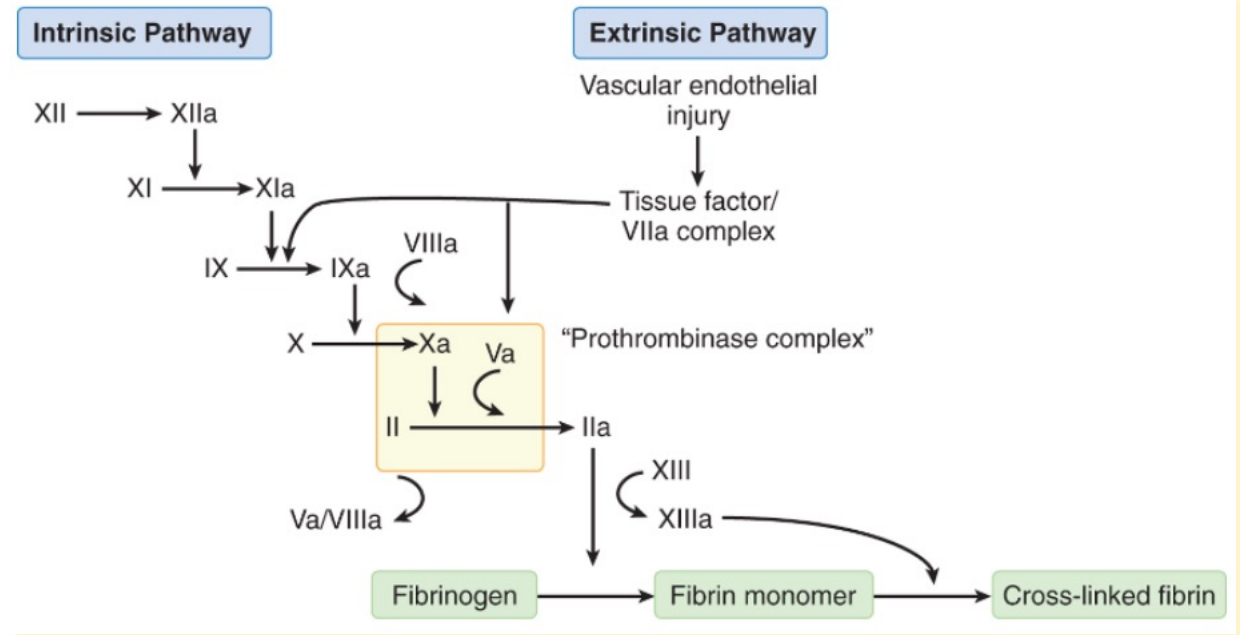
- SAG
- Plasma
- Trombocytter
- Fibrinogen
- Kalsium
- Cyklokapron
- Octostim
- Protrombinkompleks
- NovoSeven

- Frisk endotel har en rekke antiplateaggregerende, antikoagulerende og profibrinolytiske egenskaper

- Skadet endotel medfører eksponering av bla vWF som medfører platteaggregering og TF som starter extrinsic pathway

- Koagulasjonskaskaden: komplekst system for å aktivere trombin fra pro-trombin

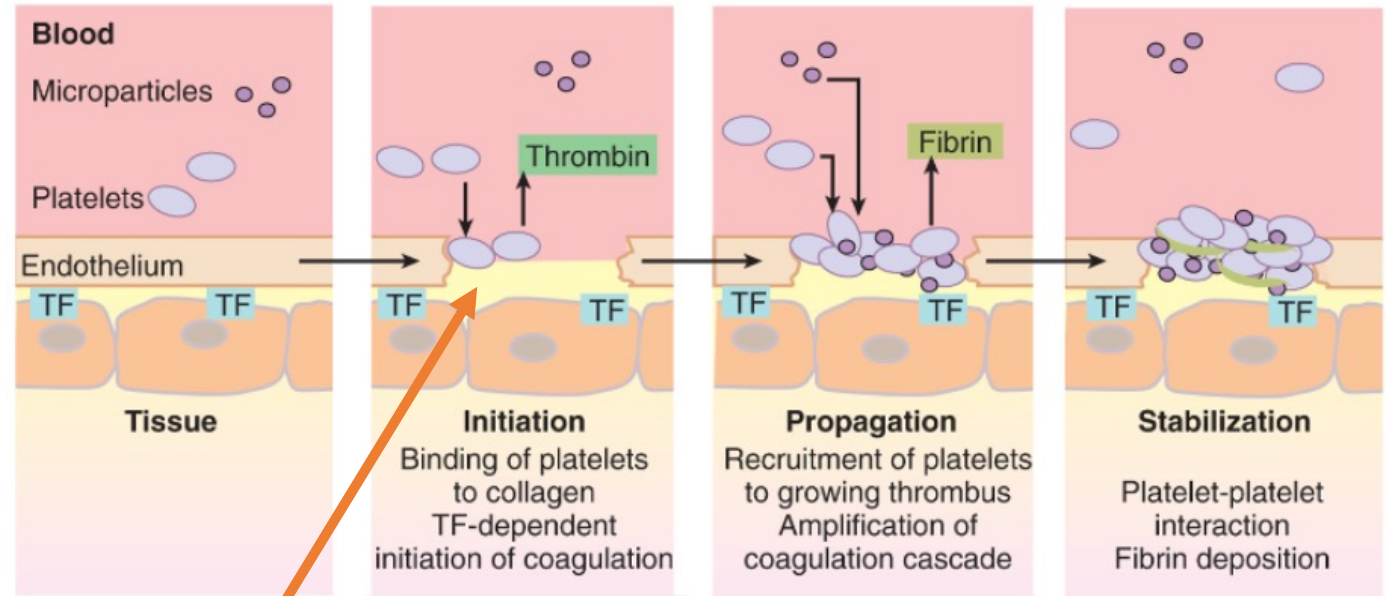
- *“Thrombin-burst is a key regulatory step”*: aktiverer plater og aktiverer fibrinogen

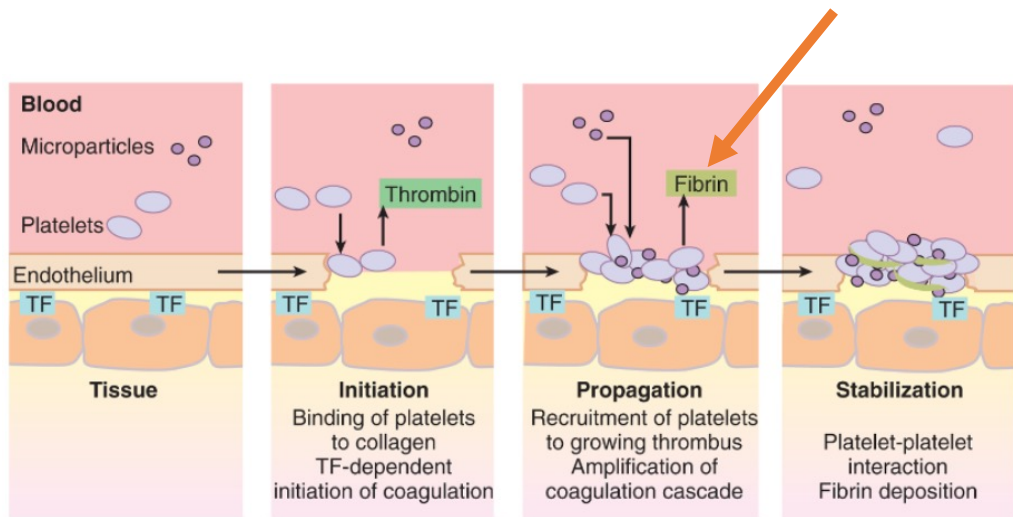
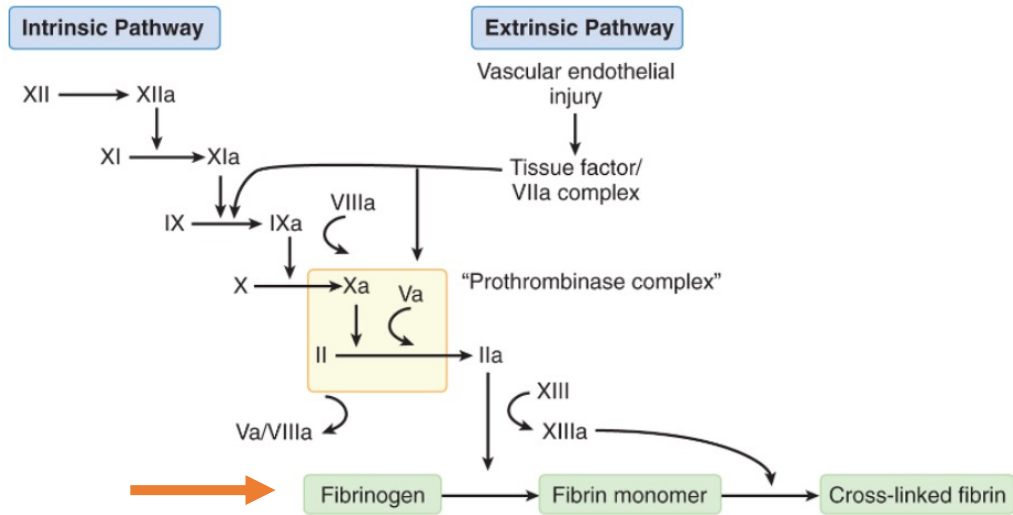


primær ----->>>>> sekundær

Optimaliser hemostase – Trombocytter

- s-trombocytter $< 100 \times 10^4/\text{mm}^3$
- TEG: redusert MA
- Klinisk blødning etter lang CPB?



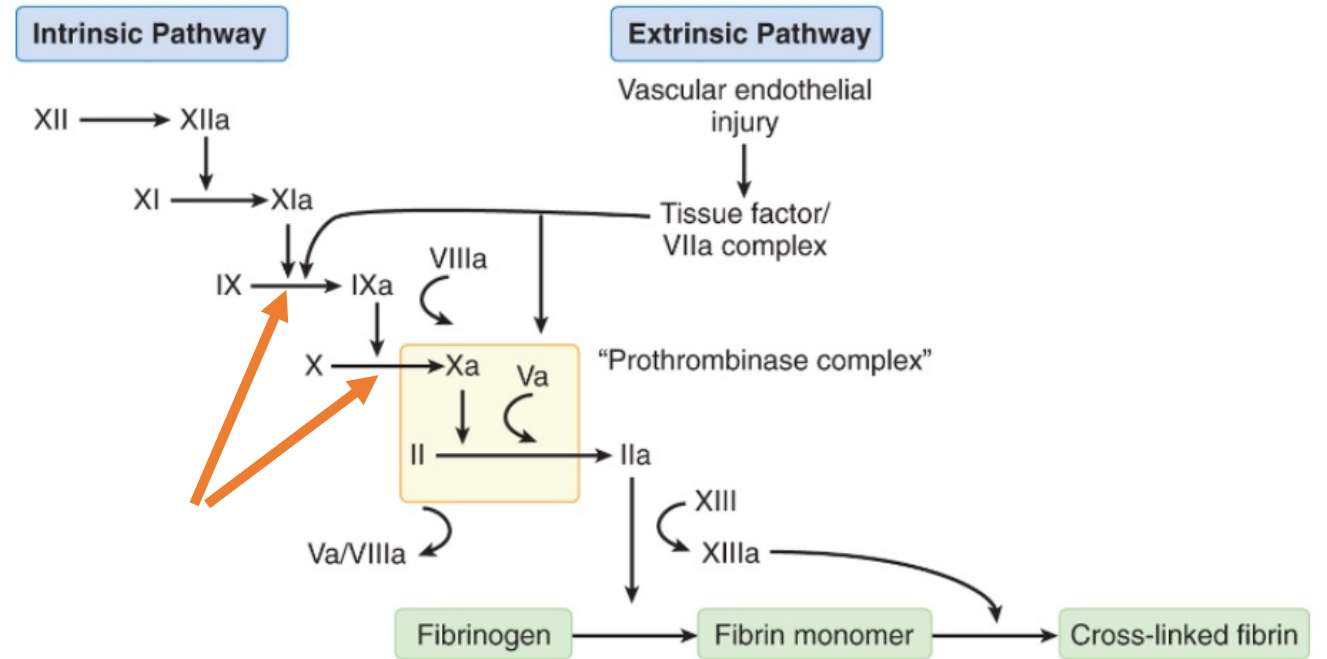


Optimaliser hemostase - Fibrinogen

- s-Fibrinogen < 2 g/dl
- TEG: redusert α
- Fibrinogen 1 – 4 gram
- Mange mener FFP har utilstrekkelig innhold av fibrinogen ved stort forbruk

Optimaliser hemostase - kalsium

- Medvirker i aktivering av FXa og FIXa (siste steg inn i protombin-komplekset)
- Ved ioniser $\text{Ca}^{2+} < 1.2 \text{ mM}$ (fra blodgass) gi kalsiumklorid 5 mmol



6. Andre komplikasjoner er sirkulasjonssvikt, hjerteinfarkt, hjerneinfarkt og bukiskemi

- Sirkulasjon: Skille mellom sentral og perifer svikt (SwanGanz, ekko-cor) og behandle målrettet
- Angiografi
- CT-caput
- CT-thorax/abdomen

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