ER BASICS · ONE-PAGER

DIC (Disseminated Intravascular Coagulation)

Triggers, clot-then-bleed physiology, labs and the ISTH score, blood products, heparin and nursing care

13 sources + more detail
erbasics.com/sheets/dic.html
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1 What DIC is

DIC is always caused by another illness. Tissue factor released by infection, injury, cancer or the placenta switches on clotting throughout the body. Tiny clots block small vessels and injure organs, and the clotting uses up platelets and clotting factors faster than the body can replace them, so the client then bleeds.

- Clotting first: microclots cause organ damage (kidneys, lungs, brain, skin)
- Bleeding next: platelets and factors are consumed; fibrin breakdown products (D-dimer) also block clotting
- Rapid (acute) DIC, over hours to days: bleeding is the main problem
- Slow (chronic) DIC, over weeks to months, often from cancer: venous clots (DVT, PE) are the main problem

EXAM TIP Exams call DIC a consumptive coagulopathy: the client clots and bleeds at the same time.

2 Triggers

GROUP	EXAMPLES
Infection	Sepsis, the most common cause (DIC in 30–50% of severe sepsis)
Obstetric	Placental abruption, amniotic fluid embolism, HELLP, eclampsia, fetal death
Cancer	Acute promyelocytic leukemia (APL); adenocarcinoma (pancreas, stomach, lung, prostate)
Tissue injury	Major trauma, head injury, burns, surgery, shock
Other	Hemolytic transfusion reaction, snakebite, pancreatitis, aortic aneurysm

About 1 in 5 clients with HELLP syndrome develop DIC. In abruption or fetal death, DIC can clear within hours once the uterus is emptied.

3 Signs

- Oozing from IV, arterial and other puncture sites, wounds and catheters
- Petechiae and purpura; ecchymoses at injection sites
- Bleeding gums, hematuria, GI or vaginal bleeding
- Microclots: cyanosis, skin necrosis or gangrene, oliguria, dyspnea, confusion
- Hemorrhage: tachycardia, hypotension, restlessness, less urine

SAFETY New oozing from line sites in a client with sepsis, trauma or an obstetric emergency should make the nurse think of DIC: report it and expect coagulation labs.

4 Labs and the ISTH overt DIC score

TEST	IN DIC
Platelets	Low or falling
PT/INR and aPTT	Prolonged
Fibrinogen	Low or falling (may stay normal in sepsis)
D-dimer, fibrin degradation products	High (sensitive, not specific)
Blood smear	Schistocytes (fragmented RBCs)

Score only when a cause of DIC is present. 5 or more is compatible with overt DIC. ISTH 2025 sets D-dimer over 3× normal at 2 points, over 7× at 3.

ISTH ITEM	POINTS
Platelets	Over 100,000: 0; 50,000–100,000: 1; under 50,000: 2
D-dimer	Normal: 0; moderate rise: 2; strong rise: 3
PT prolonged by	Under 3 s: 0; 3–6 s: 1; over 6 s: 2
Fibrinogen	100 mg/dL or more: 0; under 100: 1

EXAM TIP Fibrinogen rises with inflammation, so a normal value does not rule DIC out; a fall on two checks is the clue.

5 Treatment

- Treat the cause: antibiotics for sepsis, delivery or uterine evacuation for abruption or fetal death, surgery for trauma
- Give blood products for bleeding, high bleeding risk or a procedure, not to fix numbers
- Platelets: under 50,000 if bleeding; under 10,000–20,000 if not bleeding but at high risk
- Fresh frozen plasma 15–30 mL/kg for long PT/aPTT with bleeding
- Cryoprecipitate (or fibrinogen concentrate) for bleeding with fibrinogen under 150 mg/dL despite plasma; some sources use 100
- Heparin: prophylactic doses if not bleeding; therapeutic doses only when clotting dominates (limb ischemia, slow DIC with DVT or PE)
- APL: tretinoin (all-trans retinoic acid) corrects the DIC in 2–5 days

SAFETY Antifibrinolytics (tranexamic acid) are generally avoided in DIC; they are reserved for severe bleeding with proven hyperfibrinolysis.

6 Nursing priorities

- Monitor vital signs, urine output, level of consciousness and every site for bleeding
- Trend platelets, PT/INR, aPTT, fibrinogen and D-dimer
- Bleeding precautions: no IM injections, soft toothbrush, electric razor, no rectal suppositories or straining
- Avoid aspirin, NSAIDs and invasive procedures; apply pressure to puncture sites
- Fall precautions; check the skin for cyanosis and necrosis
- Give blood products as prescribed and watch for transfusion reactions

EXAM TIP If a question asks for the priority in DIC, choose the action that finds or stops bleeding or supports perfusion before teaching or comfort.

7 DIC or a look-alike?

CONDITION	CLUES	KEY DIFFERENCE
DIC	Trigger present; bleeding and clots	Long PT/aPTT, low fibrinogen, high D-dimer
TTP	Schistocytes, low platelets, confusion	Normal clotting tests; ADAMTS13 under 10%: plasma exchange
HUS	Schistocytes, low platelets, kidney failure	Normal clotting tests; more kidney failure, less confusion than TTP
HIT	Platelets fall over 50%, typically on day 5–10 of heparin; new clots	Clotting, rarely bleeding: stop ALL heparin, even flushes
Liver disease	Long PT/INR, low platelets	Factor VIII normal or high (low in DIC); lower D-dimer

8 Exam pearls

- Sepsis plus oozing from IV sites plus low platelets, long PT/aPTT and high D-dimer: DIC.
- First step is always treating the cause; products are for bleeding.
- Heparin in DIC is not a mistake when clots dominate; heparin in HIT is.
- Normal PT/aPTT with schistocytes points to TTP or HUS, not DIC.
- Critically ill clients with DIC have 28-day mortality of 20–50%; DIC doubles death rates in sepsis and trauma.

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