

HEMATOLOGY JEOPARDY!

TO BLEED OR NOT
TO BLEED

IT'S GETTING
CLOT IN HERE

YOU'RE SO VEIN

YOU VALVE NOT
PASS

CLOTPOURRI

\$100

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**THIS DISEASE HAS A PROLONGED aPTT & A
CONGENITAL DEFICIENCY IN FACTOR VIII**

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WHAT IS HEMOPHILIA A?

Hemophilia B has a factor IX deficiency

Can use desmopressin in hemophilia A to induce release of factor VIII from endothelial cells but manage more significant bleeding with factor concentrates



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**THE MOST LIKELY CAUSE IN PATIENTS WITH
MUCOCUTANEOUS BLEEDING SUCH AS
EPISTAXIS, BLEEDING GUMS, MENORRHAGIA**

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WHAT IS VON WILLEBRAND DISEASE?

Manage with desmopressin, including prophylactically for surgeries



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**CAUSES ELEVATED PT/INR, LOW PLATELETS,
LOW FIBRINOGEN, & ELEVATED D-DIMER
ALONG WITH SCHISTOCYTES ON PERIPHERAL
SMEAR**

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WHAT IS DISSEMINATED INTRAVASCULAR COAGULATION?

Due to widespread endothelial injury and circulating procoagulants

Need to identify underlying etiology such as sepsis, malignancy, pregnancy with severe complications

Manage supportively with transfusions (pRBCs, platelets, cryo/fibrinogen) while treating underlying etiology



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**THE TARGET FOR TREATING BLEEDING IN
COAGULOPATHY OF LIVER DISEASE WHEN
USING CRYOPRECIPITATE**

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WHAT IS FIBRINOGEN > 100?

Goal platelet count should be over 75k as well

FFP can be used but short half-life limits overall effectiveness



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THE TREATMENT FOR ACQUIRED HEMOPHILIA

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WHAT ARE ACTIVATED PROTHROMBIN COMPLEX CONCENTRATES OR RECOMBINANT FACTOR VII PLUS CORTICOSTEROIDS & RITUXIMAB/CYCLOPHOSPHAMIDE?

Coag studies will not correct with mixing due to autoantibodies,
same reason for why factor concentrates cannot be used for
treatment



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**THE MOST COMMON INHERITED
THROMBOPHILIA**

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WHAT IS FACTOR V LEIDEN?

Factor V Leiden is resistant to cleavage by activated protein C,
resulting in increased clotting

Associated with increased risk for VTE only



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**THE INDICATIONS TO INITIATE TESTING FOR
THROMBOPHILIA DISORDERS**

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**WHAT ARE THROMBOSIS AT UNUSUAL SITES,
RECURRENT IDIOPATHIC THROMBOSIS,
UNPROVOKED THROMBOSIS IN PATIENTS
YOUNGER THAN 45, FIRST-DEGREE RELATIVES
WITH THROMBOSIS, & WARFARIN-INDUCED
SKIN NECROSIS?**

Only test when patient does not have an acute thromboembolism



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**THIS DEFICIENCY CAN LEAD TO WARFARIN-
INDUCED SKIN NECROSIS IN PATIENTS TAKING
THE DRUG**

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WHAT IS PROTEIN C DEFICIENCY?

Many with the disease will experience a thrombotic event or pregnancy morbidity before the age of 50 and have a family history of thrombosis

Protein C is vitamin K-dependent so initiation of warfarin can accelerate rapid protein C depletion resulting in thrombosis



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**HYPERCOAGULABLE DISORDER WHICH
SHOULD BE SUSPECTED WHEN THERE IS
DIFFICULTY WITH ACHIEVING THERAPEUTIC
GOAL ON HEPARIN**

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WHAT IS ANTITHROMBIN III DEFICIENCY?

ATIII inhibits thrombin and factors IX & X

Acquired deficiency is more common than congenital

Heparin requires ATIII to be effective

May result in VTE-related pregnancy loss



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**HYPERCOAGULABLE DISORDER WITH ELEVATED
HOMOCYSTEINE LEVELS**

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WHAT IS MTHFR MUTATION?

**Vitamin B6 & B12 supplementation lowers homocysteine levels
but not thrombotic risk, no treatment is available for thrombus
prevention**

Do not test for this in the evaluation of thrombophilia



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**THE SEQUENCE OF RISK AND DIAGNOSTIC
EVALUATION FOR PULMONARY EMBOLISM**

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WHAT IS PERC SCORE, WELLS CRITERIA, D-DIMER IF LOW RISK, CTA/VQ SCAN?

Moderate/high risk Wells scores can skip D-dimer testing



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**MANAGEMENT FOR A PULMONARY VTE/PE
WITH GOOD PROGNOSIS & ACCESS TO
ANTICOAGULATION**

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WHAT IS OUTPATIENT ANTICOAGULATION?

Unhoused persons, uninsured would need hospital admission



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**LENGTH OF TIME FOR ANTICOAGULATION TO
TREAT A PROVOKED VTE**

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WHAT IS 3-6 MONTHS?

Same for a provoked VTE of the upper extremity

If catheter-associated, need to treat for the duration the catheter will be in place



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**DURATION OF ANTICOAGULATION FOR VTE
ASSOCIATED WITH PREGNANCY/OCPs**

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**WHAT IS ANTENATAL & POSTPARTUM FOR 6
WEEKS AFTER DELIVERY?**

Same for idiopathic VTE and hereditary thrombophilia

Use UFH/LMWH during pregnancy



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**RARE CONDITON THAT MAY CAUSE RECURRENT
ISOLATED LEFT LOWER EXTREMITY VTE**

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WHAT IS MAY-THURNER SYNDROME?

Due to left iliac vein compression by a nearby artery



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**DRUG OF CHOICE FOR VALVULAR ATRIAL
FIBRILLATION**

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WHAT IS WARFARIN?



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**THE CHA2DS2-VASc SCORE INDICATIVE OF
ANTICOAGULATION INITIATION IN VALVULAR
ATRIAL FIBRILLATION**

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WHAT IS ANY?

**Trick question - valvular afib is always treated with
anticoagulation**



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**THERAPY FOR THROMBOEMBOLIC RISK
REDUCTION FOR MECHANICAL HEART VALVES**

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WHAT ARE WARFARIN & LOW-DOSE ASPIRIN?

Risk of combined treatment more than offset by considerable
benefit



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**DURATION OF ASA & WARFARIN FOR A
BIOPROSTHETIC HEART VALVE**

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**WHAT IS INDEFINITELY & 3-6 MONTHS,
RESPECTIVELY?**



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**CHA2DS2 VASc SCORE INDICATIVE FOR
ANTICOAGULATION IN MEN AND WOMEN**

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WHAT ARE 2 & 3, RESPECTIVELY?

For nonvalvular afib



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**TIMELINE FOR DROP IN PLATELETS OVER 50%
FROM BASELINE AFTER HEPARIN INITIATION
WHEN SUSPECTING TYPE II HEPARIN-INDUCED
THROMBOCYTOPENIA**

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WHAT IS 5-10 DAYS?

Diagnose with 4Ts score but manage empirically by switching to discontinuing heparin and switching to argatroban

Type I HIT occurs within the first few days of heparin initiation and is typically benign



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**THIS TEST ANALYZES PLATELET FUNCTION,
COAGULATION, & CLOT STABILITY FOR
PATIENTS WITH UNEXPLAINED BLEEDING**

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WHAT IS THROMBOELASTOGRAPHY?



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**THESE DISEASES SHOULD BE SCREENED FOR
WHEN SUSPECTING IMMUNE
THROMBOCYTOPENIC PURPURA**

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**WHAT ARE SLE, CLL, LYMPHOMA, HIV, HCV, H.
pylori?**



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**MANAGEMENT OF PATIENT ON WARFARIN WITH
INR OF 9**

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WHAT IS HOLD WARFARIN AND OBSERVE?

Observation is indicated as long as the patient is asymptomatic
with INR 4.5-10

Give oral vitamin K if INR >10

If bleeding, give four-factor PCCs in addition to vitamin K



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**THIS MEDICATION REVERSES THE ACTION OF
DABIGATRAN**

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WHAT IS IDARUCIZUMAB?

Vitamin K, four-factor PCCs reverse warfarin
Protamine sulfate reverses heparin/enoxaparin
Adnexanet alfa, four-factor PCCs reverse DOACs

