Question 20
A 48-year-old woman presents to the emergency department of a large rural hospital with severe chest pain. An ECG shows 3-4 mm ST elevation in the anteroseptal leads.
The risk of major haemorrhage complicating thrombolysis therapy is greatest in a patient who:
A. has polycystic kidneys.
B. had an open cholecystectomy two weeks ago.
C. has recurrent heartburn.
D. is currently menstruating.
E. had an admission blood pressure of 160/95 mmHg.

Answer: B
The greatest consequence of thrombolysis is haemorrhage and of that IC haemorrhage

<table>
<thead>
<tr>
<th>Absolute contraindications:</th>
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<tbody>
<tr>
<td>Previous ICH</td>
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<tr>
<td>Known intracranial vascular lesion</td>
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<tr>
<td>Malignant intracranial neoplasm or vascular malformation</td>
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<tr>
<td>Ischaemic CVA in last three months</td>
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<tr>
<td>Symptoms or signs suggesting aortic dissection</td>
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<tr>
<td>Active bleeding or bleeding diathesis (excluding menses)</td>
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<td>Significant closed head or facial injury with 3/12</td>
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- Pts > 75 yo may get less overall benefit than younger patients
- BUT advanced age is no longer considered a major contraindication

<table>
<thead>
<tr>
<th>Relative contraindications:</th>
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<tr>
<td>Poorly controlled sBP &gt; 180 and/or dBP &gt;110</td>
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<td>Severe hypertension at presentation can be an absolute contraindication for pts at low risk</td>
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<tr>
<td>Ischaemic CVA ever</td>
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<td>Recent (with 4/52) internal bleed (GI, retroperitoneal...)</td>
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<td>Dementia (due to ?amyloid angiopathy and higher IC bleed risk)</td>
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<tr>
<td>Any known intracranial disease that is not absolute contraindication</td>
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<td>Prolonged CPR (&lt;10min)</td>
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<tr>
<td>Major surgery in last 3/52</td>
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<tr>
<td>Internal bleeding in last 2-4/52</td>
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<tr>
<td>Noncompressible vascular punctures</td>
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<tr>
<td>Prior streptokinase (more than 5/7 ago) – risk of allergy</td>
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<tr>
<td>Warfarinisation</td>
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Bleeding as a risk of Thrombolysis:
- GUSTO – 1 largest trial
- 1.8% incidence in severe bleeding
- 11.4% moderate bleeding (needs transfusion but no haemodynamic compromise)
- Bleeding most often procedure related:
  - CAGB 3.6%
  - Groin puncture of PCI 2%
- Most common site of spontaneous bleeding
  - GI tract 1.8%
- Risk is greater in women than men
- Risk is greater in combinations of
  - streptokinase + heparin
  - streptokinase + alteplase
- ASSENT-2 trial directly compared tenecteplase to alteplase
- no difference in
  - overall rate of stroke (1.8 versus 1.7 percent with alteplase) or
  - intracranial hemorrhage (ICH) at 30 days (1 percent in both groups)
- However, rate of noncerebral bleeding complications (26.4 versus 29 percent) and need for transfusion (4.3 versus 5.5 percent) were significantly lower with tenecteplase

Answers:
A. Polycystic Kidneys
- This is there because of the risk of cerebral aneurysm
- incidence in ADPKD is approximately 4 percent in young adults
- ↑ with age to as high as 10 percent
- Those at greatest risk have a family history of intracranial aneurysm or SAH
- In one study asymptomatic intracranial aneurysms were found in
  - 6 of 27 patients (22 percent) with a positive fam hx
  - 3 of 56 patients (5 percent) without a positive fam hx
- aneurysm rupture occurs in 65 to 75 percent of affected patients with ADPKD, a value higher than that of non-ADPKD patients with an intracerebral aneurysm
- most often occurs before the age of 50 and in patients with poorly controlled hypertension
- pts with one aneurysm clipped following a cerebral bleed may be at increased risk of new aneurysm formation for as long as 15 years after the initial surgery
- role for radiologic screening of asymptomatic patients with ADPKD is unsettled

Safety of anticoagulation
- studies in patients with unruptured intracranial aneurysms (most often not related to ADPKD) have concluded that it is not known if warfarin increases the risk of intracranial bleeding but, if rupture occurs, anticoagulation increases the severity of bleeding.
- It is reasonable to screen such patients for a cerebral aneurysm.
- Patients with an aneurysm should be told about the relative risks and benefits of anticoagulation and evaluated for possible nonpharmacologic therapies
- Those without an aneurysm probably have a risk of cerebral hemorrhage from anticoagulation that is similar to the general population.

***I thought this was the answer BUT its not

B. Open cholecystectomy
Year 2001 Paper two: Questions supplied by Miranda

***this is the answer
- An open cholecystectomy is MAJOR surgery because its defined as a laparotomy
- Major surgery in last 3 weeks is a relative contraindication
- I guess this is the answer because the chance of bleed is potentially higher that in a pt who may or may not have an IC aneurysm

C. Heart burn
- Active PUD is a contraindication but GORD has not been shown to increase risk of bleeding

D. Menstruation
- 12 menstruating women in GUSTO-I - no significant increase in severe bleeding compared to nonmenstruating women
- BUT significant increase in moderate bleeding that was offset by the benefits of thrombolytic therapy
- Their conclusion was menstruating women should not automatically be excluded from thrombolytic therapy.

E. Hypertension increases the risk of stroke
- Contraindication at sBP >180mmHg
- Risk of bleeding/ stroke increases with BPs >140 but below 180 need to look at other risks to stratify

Predictive model to determine the risk was developed by The Cooperative Cardiovascular Project
1. Independent predictors of ICH included the following:
   2. Age ≥75 years
   3. Black race
   4. Female sex
   5. Prior history of stroke
   6. Systolic blood pressure ≥160 mmHg
   7. Weight ≤65 kg for women or ≤80 kg for men
   8. International normalized ratio (INR) >4 or prothrombin time (PT) >24
   9. Use of alteplase (versus other thrombolytic agent)

- Get one point for each of the independent predictors.
- The risk of ICH ranged from 0.69 percent for patients with 0 or 1 points to 4.11 percent for patients with ≥5 points
- The 2004 ACC/AHA task force gave a class I recommendation to the use of primary PCI rather than thrombolysis in patients with a risk of ICH ≥4 percent