Management of Venous Thrombosis

(and some of the other problems)

in Intravenous Drug Users

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A balance…

DVT management in IV Drug Users *(past or present)*

If IVDU patient is pregnant, refer to on-call obstetrics team – to be managed as per DVT in pregnancy protocol

Initial attendance

Assess suitability for Outpatient management

- Cellulitis or injection site abscess → Admit for IV Antibiotics ± I&D[1]
- SOB / Chest pain → Consider PTE algorithm
- Chaotic lifestyle-High chance DNA for scan → Consider IP DVT Management

Continuing IV drug use before Ultra-Sound Scan / review?

Yes → Do not administer LMWH

No → Administer LMWH and reinforce avoidance of IV drug use

Arrange Outpatient Ultrasound slot & next day review appointment
Discharge with oral antibiotics[1] if required and relevant patient information[2].

Review

Acute DVT confirmed on ultrasound
(not just old chronic thrombus or fibrosis)

Reassess suitability for any out-patient anticoagulant therapy?

Exclusion criteria include:

Significant coagulopathy or platelets <75 x10^9/L

Likely to continue to inject or chaotic life style and not on a substitution programme

Not registered with primary care provider (GP, Community Homeless / Addiction Teams)[3]

Suitable

Continue anticoagulation [*see options 1 & 2 below*]
Review any cellulitis/abscess

Not suitable

Stop anticoagulant therapy before discharge & suggest self-referral to CAT

Ascertain if on a substitution programme.

- **No:** refer to hospital addiction liaison nurse [ext 80204] for assessment [in-patients]. If out-patient provide information & encourage self referral to Community Addiction Team [CAT].
- **Yes:** identify prescriber/pharmacist to obtain current substitution/dose regimen and refer to addiction liaison as above.

Anticoagulation

Determine type and duration of anticoagulant therapy

Option 1

6 weeks rivaroxaban

[off-label duration, but safer if drug use unstable]

- If rivaroxaban contra-indicated[4] [CKD or interacting drug] offer *sc* LMWH[5]
- Supply 21 days Rivaroxaban 15mg twice daily and issue rivaroxaban discharge letter to GP[6]
- Agree plan with primary care / substitution prescriber

Option 2

Standard 3 months rivaroxaban[4,6] or warfarin

- No IV drug use for >12 months
- Stable, non-chaotic life style (usually on, or completed, a substitution programme)
- Deemed likely to comply with medication & monitoring [if warfarin]
- Lifestyle and habits conducive to stable INR control (consider alcohol intake, other medicines etc.), if warfarin
- Agree plan with patient's primary care (substitution) prescriber

Establish on anticoagulant & refer to GCAS [if warfarin]

Issue immediate discharge letter[7]

30 minutes

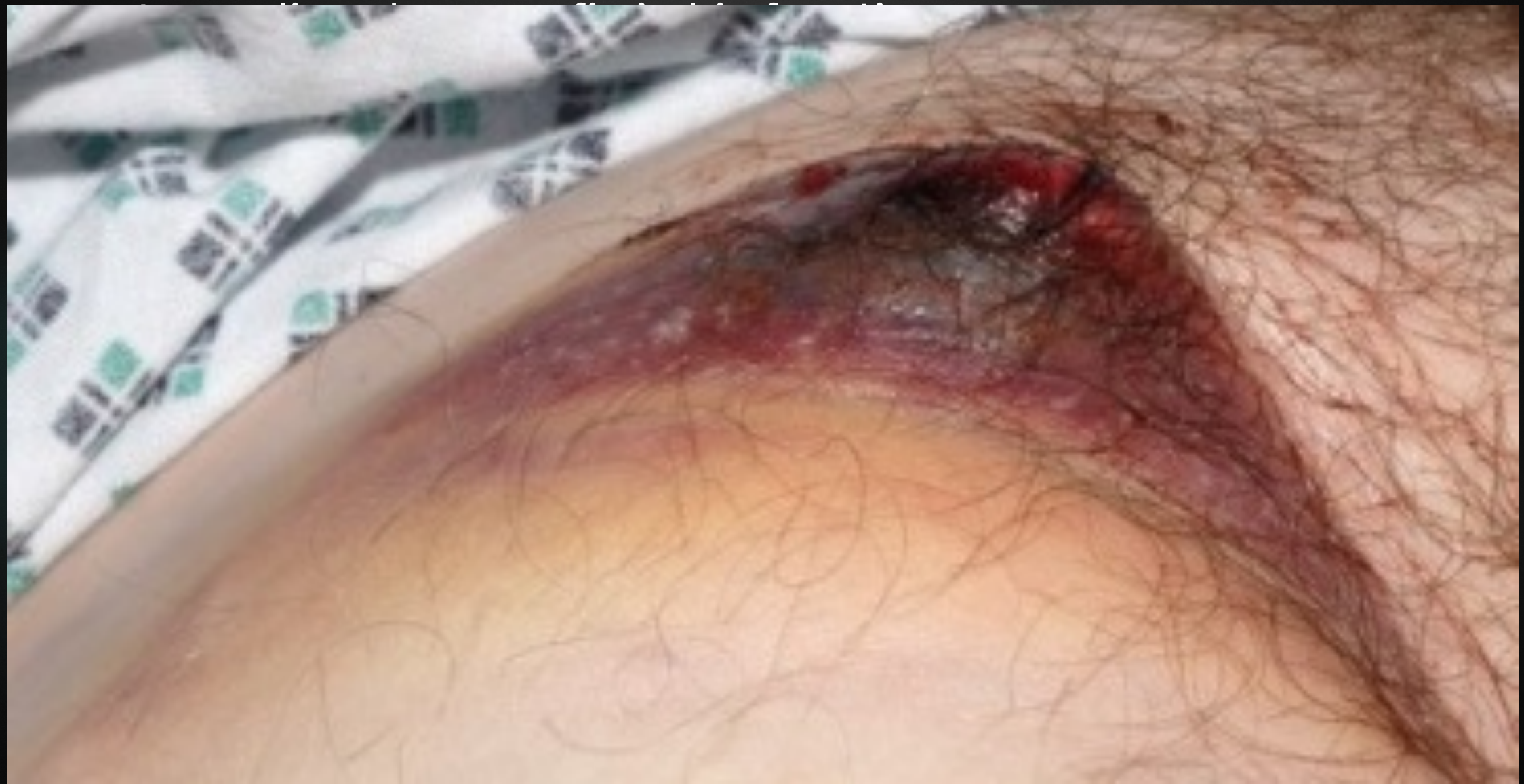
The patient…

- 51 year old male
- Presents midnight via SAS – ?pyrexial.
- 3 day binge of heroin and cocaine – last injected 9pm?
- c/o right groin and leg pain
- Right leg looks “bigger”
- Observations normal

Background

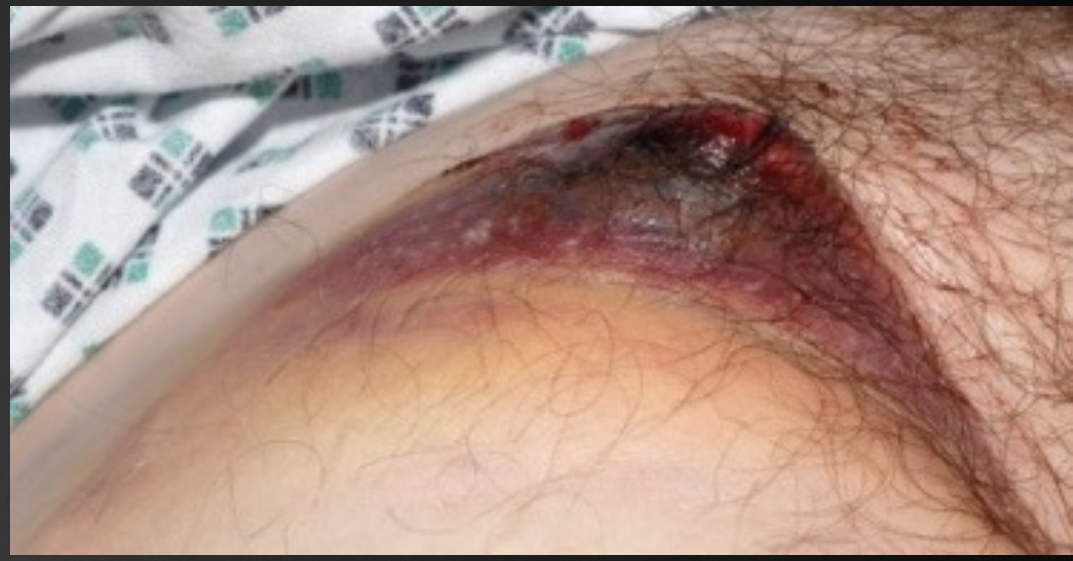
- On & off drugs for 30 years
- “Vein” on left side burst before (large scarring and soft tissue defect evident)
- Injection site infections
- “Infected clot”
- Previous Left DVT
- Denies BBV

What's going on?



Assessment

- "No IV access"
- Few mls blood obtained
  - Lactate/VBG normal
  - CRP 17
  - WCC 8



"Can I use the ultrasound to put a drip in?"

- Hourly observation have remained normal
- Patient not concerned - just wants antibiotic

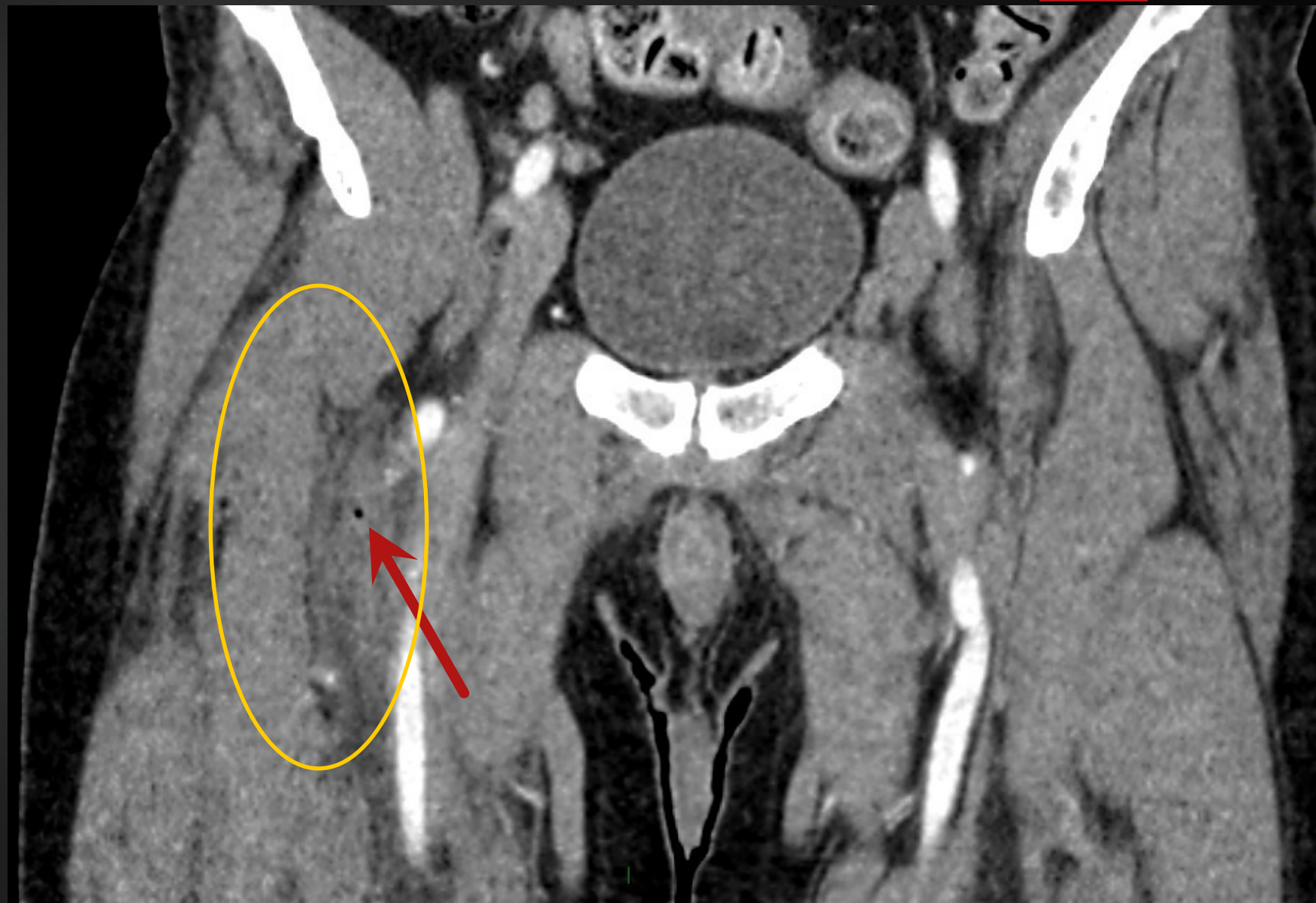
Infection…

- Injection-related abscesses - common in IVDU (one third have reported an abscess within prior 12 months).
- Injection-related abscesses are often polymicrobial (43% to 71% of studies).
  - four or more organisms may be present.
- The most common organisms are streptococcal species, *Staphylococcus aureus* and mixed anaerobes but oral commensal organisms predominate.
- Multiple abscesses in the same patient may have different flora.

However …

- A few “veins” on limb ultrasound - but venflons won’t feed (of course).
- Ultrasound of groin for ?collection – poor images…
- Patient remarkably uncomplaining despite access attempts.
- ?more aggressive intervention required.

- Stranding and soft tissue thickening proximal right superficial femoral artery
- gas locule close to sinus tract
- femoral veins compressed and distorted at groin due to repeated injections
- Subcutaneous oedema noted in both legs.

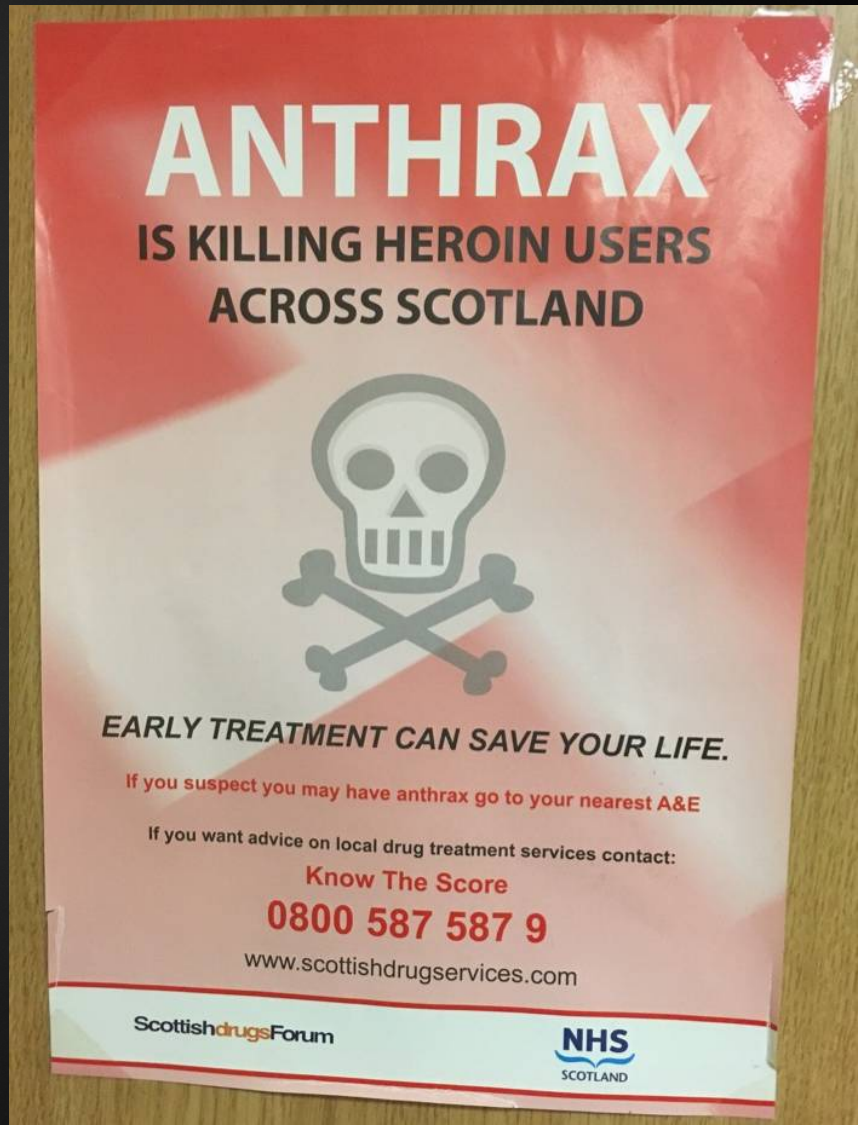


Infection…

- Check patients previous micro organisms / conditions
- Check for previous MRSA
- Discuss with Microbiology / Infectious Diseases
- Public Health alerts
  - Recent local infection patterns

Out-breaks of spore-forming organisms

- are rare
- originate from contaminated heroin
- greatest risk if inject into skin or muscle



Serious Infection?

- Benzylpenicillin
- Flucloxacillin
- Metronidazole
- Clindamicin
- Gentamicin

- +/- surgical exploration if radiological findings or suspicion

Other infections

- Hygiene not the main concern
- Advice recently changed to try to check for BBV if
  - > 3 months since last check
  - ongoing risk taking!

- 9ml EDTA (purple) tube

Discharge?

Clindamycin: 450mg four times per day

- excellent Gram-positive and anaerobic cover
- has activity against MRSA
- high oral bioavailability (90%)
- safe to use in penicillin allergic patients
- reduces bacterial toxin production in organisms such as *Streptococcus pyogenes* and Clostridium species
- monotherapy can aide adherence

Discharge?

- Limited / localised infection / well / no SIRS or Sepsis
- Antibiotics and DVT service follow up
- Do we administer anticoagulation until DVT clinic?
  - Risks of further IV drug use

  vs

  - Risk of embolisation of DVT

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DVT & PE

- Data is poor … … so exact answers difficult
- 4 - 47% DVT prevalence in IVDU
- Incidence of DVTs in IVDU is some 100 times greater than in the general population
- Mean age of a first (or only) DVT was 30 years
  - on average 8 years after heroin was used for the first time.

Pulmonary embolism

- In one study 1:7 (15.7%) of IVDU had signs of leg ulcers
- Common Radiology findings are that veins have
  - Inflammatory/scarring (chronic) changes
  - partial or complete occlusion
- Risk of developing PE appears low (2–6%).
  - Clots more organised / inflammatory and less likely to embolise?
  - asymptomatic or sub-clinical PE (VQ defects??)
  - more common for patient to present with aspiration/pneumonia 2y to lifestyle
- What about the “unlucky” “early” DVT?

Some other real world expertise…

Follow up

- DVT clinic at GRI since 2009/2010
- Will they attend for follow-up?
  - Only 60% will attend for first DVT scan
  - Therefore not booked in for scan slot and turn up 1 hour early
- If DNA - check Trakcare to see if admitted (not many)
- Most IVD scans are "positive"
- If scan negative … > repeat scan
  - approximately 50% turn up

Anticoagulation?

- Contact **GP** for background –knows patient
- Can be invaluable but variable response

- Contact CAT

- **Clinical portal** for previous attendance pattern
- Clarify decision with Haematology

Anticoagulation?

- LMWH / Warfarin / **DOAC**
  - 6 weeks – off label but safer if drug use unstable
  - 12 weeks – no IV drug use for 12 month, on or completed substitution programme

- Options discussed with patient
  - 21 days supply (or small supply until GP can review (ambiguity or GP not contactable)
  - Illegal market in anticoagulants!

Special circumstances

- Regular attenders!
- Serving custodial sentence
- Mostly from High security prisons
- If >6 remaining on sentence weeks then advise treatment
  - "More supervised" at High security prison (?)

A final word

Patient from earlier

Ultrasound 3 days later

- Partially occlusive thrombus is identified within the right popliteal vein consistent with DVT.
- Femoral veins are patent and compressible.
- No evidence of thrombus within long saphenous vein

Discharged D6 on Clindamycin & Flucloxacillin

3 months rivaroxiban

GP in 4 days for "daily dispense"

Take home points

Commonly 2 different patient presentations

1. Leg swelling / painful leg
    - acute/chronic DVT
    - localised infections
2. Groin swellings - ?more serious infections

- Can have both
- Pulmonary embolism – rarer (???)

Take home points

- Be wary of the "compliant" drug addict
- Surgery or medicine? (or…)
- Know the microbiological & infection background
- FU: Clarify behaviour & compliance
- Realistic individualised treatment

  (Realistic Medicine ™)
- PE rare but more information needed?

Questions ?

Thanks to Dr R Stevenson Cons, GRI EM, for some of the infection data