# Groin Jaggers and What We Do with Them

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# Groin Injecting

- Refers to the use of the femoral vein as an injecting site in people who inject drugs (PWIDs).
- It is a common practice - 53% of PWIDs having reported ever injecting into the groin [1].
- The natural history and rational behind groin injecting [2]:
  - The mean length of time between first injection and first use of groin was 7 years.
  - The most common reason was that “there were no sites left”. However, the groin site was reported as being the last remaining **convenient** site.
  - Up to two thirds experienced health problems associated with groin injecting but still persisted with the practice.

# Groin Injecting - Complications

- Cellulitis.
- Abscesses.
- Pseudo-aneurysms.
- Aorto-venous fistulas.
- Foreign bodies.
- **Deep vein thrombosis.**

# Deep Vein Thrombosis

- Pathogenesis [3]:
  - **Blood alterations:** insoluble microparticles, microorganisms.
  - **Vessel wall:** multiple injections, vein wall irritation/inflammation.
  - **Venous stasis:** tension from scars, pressure (e.g. from aneurysms/abscesses), states of narcotic stupor.
- Risk factors:
  - type of injected substances, non-hygienic injections of substances, groin injection, homelessness and poor contact with medical services.

# Deep Vein Thrombosis

- DVT is the third most common cause of hospitalisation in PWIDs [4].
- Injecting drugs contributes towards 48.4% of DVTs in patients under the age of 40 [5].
- 22% of PWIDs have previously experienced a venous thrombosis [6].
- DVTs due to groin injection are more often bilateral, right sided and involve the femoral/iliac vein [3].
- Can present with more systemic features including fever, polyarthralgia and malaise [7].

# Deep Vein Thrombosis - Management

- Management challenges in PWIDs:
  - Missed appointments.
  - Poor compliance with treatment regimes.
  - No primary care physician for follow-up.
  - No fixed abode.
  - High self-discharge rates.

# Deep Vein Thrombosis - Management

“With differences in pathophysiology, presentation and patient group; should DVTs induced by injecting drugs be managed differently from ‘conventional DVTs’ and are they currently being managed differently in clinical practice?”

# Aims

- To review the evidence base behind the treatment of DVTs induced by injecting drugs and whether they should be managed differently to ‘conventional’ DVTs.
- To review National and local Scottish guidelines to find out how DVTs induced by injecting drugs are currently being managed.

# Evidence Base - Management

- Significant paucity of evidence.
- All evidence was either expert opinion, case report or retrospective analysis.
- Patient groups usually small.
- No RCTs.
- No data on DOACs.

# Evidence Base – Review Articles

- **[3] Kwiatkowska W, Knysx B, Gasiorowski J, Witkeiwicx W. Deep Vein Thrombosis of the Lower Limbs in Intravenous Drug Users. Postepv Hig Med Dosw 2015; 69: 510-520.**
  - Anticoagulation therapy needs to be applied at an individual basis.

- **[8] Russel M, Dawson D. Low Molecular Weight Heparin for Intravenous Drug Users with Deep Vein Thrombosis. Emergency Medicine Journal 2004; 21 (6): 711.**
  - LMWH is a safe and effective treatment for DVTs.
  - However, it stated that the evidence was very limited and recommended following local guidelines.

# Evidence Base – Choice of Anticoagulant

- Warfarin is unsafe in this patient group [9-11].
- LMWH was the anticoagulant of choice due to its more predictable anticoagulant effect and need for less frequent monitoring.
- Comparing LMWH and warfarin in terms of patient follow-up and compliance [12]:
  - 4/5 patients on LMWH attended 90% of their clinic appointments and had no complaints with their therapy.
  - 2/10 patients on warfarin achieved the minimum clinic attendance of 75% with satisfactory INRs only 35% of the time.

# Evidence Base – Duration of Anticoagulation

- No real clear consensus from the literature with regards to the ideal duration.
- Durations in the literature varied between 6 weeks – 6 months.
- Two studies recommended at least 6 weeks of anticoagulation with LMWH [11,13]:
  - Poor compliance with treatment; 6 weeks was thought to be a pragmatic approach.
  - However, both studies stated higher rates of DVT recurrence/chronically swollen leg with this short duration.
  - Were the high recurrence rates due to inadequate compliance or due to the persistence of injecting?

# Evidence Base – Duration of Anticoagulation

- Two studies suggested longer durations of anticoagulation [14-15].
- One study [14] suggested 4 months of LMWH. It separated patients into two groups; LWMH for 4 months or for 6 months. No PEs or recurrent DVTs occurred in these patients and there was no difference in outcomes between the two groups.
- The other study [15] suggested LMWH for 3 months. This was because there was a relatively low rate of pulmonary embolism (PE) amongst its patients (6%).
  - As PWIDs were not at a greater risk of PE than the general population, there was no evidence to support deviation from the 3-month treatment recommendation for a first DVT that is applied to conventional DVTs.

# Evidence Base – Duration of Anticoagulation

- Lifelong anticoagulation?
  - For those who continued to inject and have recurrent DVTs.
  - Overall, it was felt that the risks outweighed the benefits and is not to be recommended [11].

# Evidence Base - Complications

- Sepsis.
  - 63% of their patients with DVTs have associated cellulitis/groin infections [11]
- Pulmonary emboli.
- Post-thrombotic symptoms.
- Bleeding?

# Guidelines – How are They Being Treated?

- **National : November 2015.**
  - SIGN, NICE and the British Haematology Society.
- **Regional: November 2015 – January 2016.**
  - Haematologists and Acute Medical Physicians from all 14 NHS Scotland health boards were contacted.
  - Professionals from 11 NHS Scotland health boards got back in touch. 7 had specific guidance for the management of DVTs in PWIDs.

| National Guidelines | **Suggest Management for 'Conventional' Provoked Proximal DVTS** | **Recommended Management for DVTs Secondary to Injecting Drugs** | **Level of Evidence for DVTs Secondary to Injecting Drugs** | **Notes on Management** |
|---|---|---|---|---|
| **NICE, June 2010** | Warfarin for 3 months at a target INR of 2.5 after an initial period with LMWH/UFH/fondaparinux | N/A | N/A | N/A |
| **SIGN, December 2010 (updated in October 2015)** | Warfarin for 3 months at a target INR of 2.5 after an initial period with LMWH/UFH/fondaparinux | LMWH | Grade 3: evidence is from non-analytic sources e.g. case reports | Unsuitable for warfarin due to issues with venous access and compliance with oral therapy. Did not state ideal duration of LMWH |
| **BHS 2010 Guidelines** | Warfarin for 3 months at a target INR of 2.5 after an initial period with LMWH/UFH/fondaparinux | N/A | N/A | N/A |
| **BHS 2005 Guidelines** | Warfarin for 3 months at a target INR of 2.5 after an initial period with LMWH/UFH/fondaparinux | LMWH | Grade C: further research is required to improve confidence in this recommendation | LMWH should be an alternative instead of warfarin. Did not state ideal duration of LMWH |

| | ‘Conventional’ DVTs | | DVTs Secondary to Injecting Drugs | | Notes on Management |
|---|---|---|---|---|---|
| | Anticoagulant | Duration | Anticoagulant | Duration | |
| 1. | Rivaroxaban/ warfarin | 6-12 weeks until follow up to decide on further duration | LMWH | 6 weeks until follow up to decide on further duration | • Do not give wafarin |
| 2. | Rivaroxaban/ wafarin | 3-6 months | Option 1: Rivaroxaban | 6 weeks | • Off label duration but safer if patient unstable |
| | | | Option 2: Rivaroxaban/wafarin | 3-6 months | Standard therapy to give if<br>• No drug use for over 12 months<br>• Non chaotic lifestyle<br>• Deemed likely to comply with medication and monitoring<br>• Lifestyle and habits conductive to stable INR |
| 3. | Rivaroxaban/ warfarin | 6 months | LMWH | 3 months | Patient inclusion factors<br>• Known/previous PWID with poor venous access<br>• No CI<br>• Normal renal and liver function |
| 4. | Rivaroxaban/ warfarin | 3 months for provoked, 6 months for spontaneous | Rivaroxaban | 3 months | • If on therapy for HIV/HCV, give LMWH |
| 5. | Rivaroxaban/ warfarin | 3 months | LMWH | 6 weeks | N/A |
| 6. | Rivaroxaban | 6 months | Rivaroxaban | 6 months | • Treat the same as other DVTs but do not extend beyond 6 months |
| 7. | Rivaroxaban | 3 months for provoked, 6 months for spontaneous | LMWH | 6 weeks | • Do not give warfarin |

# What Conclusions Can We Take To Help Improve Management?

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1. **Prevent the patient groin injecting or developing a DVT in the first place.**
   - Structured safer injecting training for PWIDs.
   - Needle exchange services and needle education.
   - Education with regards to the drugs used.
   - Education about aseptic injecting.

# What Conclusions Can We Take To Help Improve Management?

2. **Treatment needs to be individualised.**
   - DVTs secondary to injecting drugs are due to a local rather than a systemic stimulus.
   - A patient who has stopped groin injecting should theoretically receive a shorter duration of anticoagulation compared to those who continue to inject or have other risk factors.
   - Ideally patients should receive at least 6 weeks of anticoagulation and then be followed-up at this point to decide whether they require further treatment.
   - Always need to consider coexisting infection/sepsis.

# What Conclusions Can We Take To Help Improve Management?

3. **Compliance needs to be improved.**
   - Supervised once daily injections/oral tablets?
     - Could be done at general practices, addiction services or when a patient collects their opioid substitution therapy.
     - Labour intensive but would ensure compliance.
   - Would patient be more likely to take tablets or have injections?
     - DOAC vs LMWH.

# What Conclusions Can We Take To Help Improve Management?

4. **Possible opportunity for getting help to stop injecting.**
   - Factors the contribute towards cessation of groin injecting [16]:
     - Being on opioid replacement therapy for a prolonged time.
     - **Developing health complications related to injecting**.

# What Conclusions Can We Take To Help Improve Management?

5. **More evidence is required.**
   - Further literature is required to build confidence in this field.
   - It is difficult to carry out any sort of randomised controlled trial in these patients.
   - The use of DOACs in regional protocols highlights that decisions are being made on expert opinion alone.
   - Whilst this might not be the most evidence based means, it is the most pragmatic in dealing with this patient group.

# Thank You – Questions?

# Refences

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