Unit VI: Sclerotherapy and Telangiectasia’s of the Lower Extremities

At the end of this unit, the learner will be able to:

1. Understand the anatomy of the venous system in relation to venous disease
2. Discuss contraindications of sclerotherapy
3. Identify potential complications of sclerotherapy treatment

Essential Concepts

- Venous anatomy of the lower extremities
- Components of sclerotherapy
- Complications of sclerotherapy

I. Venous Anatomy of the Lower Extremity  

(Hotta & Harper, n.d.)

Complex network of vessels and valves = unidirectional blood flow toward heart

Google Images, 2014
Comprised of Two Systems

- **Deep Venous System**
  Responsible for 90% of venous return
  Situated below the muscle fascia
  Runs parallel up the leg

- Includes the following veins:
  - Femoral
  - Popliteal
  - Anterior Tibial
  - Posterior Tibial
  - Peroneal

- **Superficial Venous System**
  Originates in the skin, merges into branch/reticular (feeder) veins then lead to larger veins
  Distends under pressure
  Effected by temperature and hormonal influences
  Connects to the deep system by perforating vessels

- Includes the following vessels:
  - Great and short saphenous veins

II. Telangiectasia - Spider Veins (Hotta & Harper, n.d.)

Spider veins are independent of underlying reflux of larger superficial veins

- **Characteristics**
  Fine, feathery, flat or profiled (0.1mm-1mm)
  Defined and darker (1mm-2mm)
  Vary in presentation and usually are
  Dependent on underlying venous disease

- **Symptoms can include:**
  - Burning
  - Itching/stinging
  - Pain (Hotta & Harper, n.d.)
III. Components of Sclerotherapy  
(Hotta & Harper, n.d.)

- **Client History**
  - Genetics
  - Lifestyle; including occupation, tanning, trauma to legs
  - Hormone Therapy
  - Pregnancy
  - History of blood clots

- **Physical Assessment**
  - Visual exam of vein patterns
  - Doppler exam of vein patterns and blood flow
  - Skin changes
  - Edema
  - Scars
  - Leg ulcers

- **Client Education**
  - Multiple treatments may be required to resolve area(s) of concern
  - Treatments may or may not relieve symptoms
  - Success dependent on compliance with post care follow through
IV. Sclerosing Agents  (Hotta & Harper, n.d.)

**IMPORTANT to remember:** Choose agent with minimal concentration and volume to minimize adverse effects (Alaiti, 2013).

- **Sotradecyl - sodium tetradecyl sulfate**

  Only FDA approved agent for sclerosing leg veins
  1% and 3% standard concentrations

  **Dosage**
  0.25% for spider veins 0.1-2mm
  0.5% for veins >2mm
  May cause hyperpigmentation post treatment
  Risk: Tissue necrosis (extravasation)

- **Polidocanol - Asclera, Aethoxysclerol**

  Nonester local anesthetic
  Maximum daily dose 2mg/kg
Dosage
0.5-1.0% reticular veins (2-4 mm) and venulectasis (1-2 mm)
0.25-0.75% for telangiectasia (<1 mm)
Painless on injection
May produce hyperpigmentation

- **Sotradecyl and Polidocinol Foam Detergent Solutions**
  Used for Larger veins > 4mm
  Advantages include:
  Smaller volume needed for injection
  Lack of dilution with blood (dilution decrease efficacy)

- **Ethamolin - ethanolamine oleate**

*Highest incidence of allergic reactions

V. Treatments (Hotta & Harper, n.d.)

- **Injection techniques**
  Proximal sites of reflux treated first
  Tx larger veins before smaller veins
  30 - 32g needle with 3ml syringe
  Injection to be slow and precise with minimal pressure
  Severe pain or burning may be a sign of extravasation
  Compress each injection

- **Post Treatment Care**
  Graduated compression hose for two weeks (decrease risk for DVT)
Ambulation immediately and daily  
Follow-up visits: 4-6 week's post procedure

- **Complications**  
  Hyperpigmentation – mainly seen with larger vessels  
  Allergic reactions  
  Telangiectasia matting  
  Ulceration  
  Tissue necrosis (extravasation or injection into an arteriole)  
  Spasm

- **Treatment**: massage  
  - Topical 2% nitroglycerin ointment.  
  - Hyaluronidase (75 units in 3 ml normal saline or lidocaine) for extravasation

- **Contraindications**  
  Pregnancy and nursing  
  Active infection in the area to be treated  
  Anticoagulation Rx  
  Thrombophlebitis  
  Allergy to sclerosing agent

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**TEST YOUR KNOWLEDGE**

1. The venous system of the lower leg extremity includes the femoral, popliteal, anterior tibial, posterior tibial, peroneal, and brachial veins.

   A. True  
   B. False

2. Sclerotherapy eliminates fine, feathery, and flat veins.

   A. True  
   B. False

3. Telangiectasia matting is normal in sclerotherapy.

   A. True
B. False

4. A 30-32g needle with 3ml syringe should be used in sclerotherapy. The injection is to be performed slow and precise with constant pressure.

A. True
B. False

5. **Sotradecyl** (*sodium tetradecyl sulfate*) 0.5% is FDA approved for spider veins 0.1-2mm.

A. True
B. False

**Answer Key**

1. = B
2. = A
3. = B
4. = B
5. = B