Training Programme for Physiotherapists
IHTC Fellow

Week 1:

Day 1:

Introduction to the IHTC program by the Hemophilia Rehab Team, and orientation to the physiotherapy hemophilia outpatient unit. The Trainee will be given a brief overview of Self Directed Learning (SDL) and materials which include articles, questions to discuss and practical implications. The SDL is divided into five sections each concentrating on different areas of rehabilitation, as follows:
1. SDL I - Introduction to principles of Rehabilitation in haemophilia
2. SDL II - Synovitis and Arthropathies
3. SDL III - Acute joint and muscle bleeds
4. SDL IV - Functional assessment for Haemophilia
5. SDL V - Gait analysis.

Day 2:

Orientation to the Hemophilia patients in the physiotherapy room who are receiving regular treatment. The discussion on the importance of history collection from the patients will be done. The family history, to find out the genetic behavior / link involved with this disease. The bleed history and its implication on the decision making as to whether the joint is a target joint, and to make clinical diagnosis of the joint as to whether the swelling would be an acute bleed or chronic synovitis.

Day 3:

Assessment of the hemophilic patients which includes a detailed history followed by general orthopedic assessment (2 patients). Following the assessment, there will be a discussion about the patient with the Physical therapist. Importance of the RICE protocol will be discussed, emphasizing on the technique of application, duration and frequency of application of cryotherapy.

Day 4:

Every Thursday's, at 3.00 pm there will be a Multi Disciplinary Clinic discussion where the Hematologist, Orthopedic surgeon, Physiatrist, Physical therapist and the Occupational therapist involved in the Hemophilia Rehab team meet and make decisions on the plan for management for each patient. In this regard all the patients who need to be discussed will be assessed by each of the specialists prior to the clinic. An average of 6 patients will be discussed
every week. The trainee has to do a basic orthopedic assessment to understand and follow the discussions at the clinic.

**Day 5:**

The Hemophilia Joint Health Score (HJHS) is a clinical score which has 8 items, and measures the six joints commonly affected in hemophilia: elbows, knees, ankles, it also has an additional gait score. The total HJHS score is 124, including the gait score. The scoring using this instrument will be taught by the physiotherapist. The trainee will get hands on experience of doing the HJHS assessment on 2 patients.

There will be a discussion on **“SDL I - Introduction to principles of Rehabilitation in hemophilia”** by Physiatrist.

**Week 2:**

**Day 1:**

Treatment and follow up of all the hemophilic patients coming to the Physiotherapy OPD, along with the physiotherapist. Discussion with the physiotherapist, on the following:

- Musculoskeletal manifestation of Hemophilia.
- Identifying the joint and muscle bleeds.
- Management of acute joint and muscle bleeds.

Discussion with the Hematologist on **“Introduction to hemophilia management and management of acute complications”**.

**Day 2:**

Assessment of 2 patients using the HJHS tool, following which there will be a discussion with the physiotherapist. Treatment goals and plan for these patients will be discussed, and the trainee will be starting to treat the patients under supervision of the physiotherapist.

Discussion on **SDL II - “Chronic synovitis and arthropathy”** by the physiotherapist.

**Day 3:**

Assessment of new patients and follow up and treatment of the old patients who are on regular treatment.

Assessment and treatment of specific conditions like Psoas bleed (sensory loss, muscle power, Thomas test), quadriceps bleed, calf bleed, forearm and biceps bleed will be discussed and if there are patients with these conditions they will be assessed and followed up.

Physiotherapist will discuss on the **“Criteria for Mastery of Exercise (Progression)”** which includes:

- Biomechanical correctness of movement with demonstration of control
- No substitution patterns/tendencies
• Minimal perception of exertion
• Non-symptom producing
  
  * No residual muscle soreness,
  * No increase in pain,
  * No increase in swelling,
  * No increase in skin temperature,
  * No decrease in ROM / function.

Day 4:

Discussion on “Common Progression Route – changing the challenge” while progressing the exercise.

Patients who are short listed for the Hemophilia Rehab Clinic will be assessed for presentation, and discussion. Also the progress of the patients will be reviewed, and further plans made.

Discussion on SDL III which includes:

(a) Rehabilitation of muscle dysfunction (Iliopsoas and Gastrocnemius hemorrhage) in hemophilia.
(b) Neurological lesions following musculoskeletal bleeding in hemophilia.
(c) Current concepts in electrotherapy.

Day 5:

Discussion on “Factors and dosage calculation, investigation and component production” by haematologist.

Advanced Techniques in physiotherapy including Joint Mobilisations (Maitland’s peripheral joint mobs, Mulligan’s method), Soft tissue manipulations (Myofascial Release), Electrotherapeutic Modalities, E-Stim / TENS / PSWD will be discussed.

Week 3:

Day 1:

Visit to the Clinical Pathology Laboratory, to learn the coagulation work up and the various tests done for a hemophilia patient. would discuss on various aspects with regard to hemophilia.

A discussion on “Re-entry into exercise program after a bleed” will be done and videos on what happens to the joint when a bleed happens (pathophysiology) will be shown.

The Physiotherapist will discuss on Fixed Flexion Deformity (FFD) protocol, following which the trainee will assess new hemophilia patients with FFD and follow up the patients in the physiotherapy OPD.

Day 2:
Visit to the Blood Bank where transfusion medicine specialist will discuss on the process of how the received blood is screened for the various infectious diseases, divided into its components and the various methods of storage.

The occupational therapist will discuss on SDL IV - Functional assessment for Hemophilia, focusing on FISH and COPM.

The physiotherapist will discuss on identifying chronic synovitis and management of chronic synovitis, following which the trainee will assess patients with chronic synovitis and follow up the patient every day on the treatment.

**Day 3:**

The orthopaedician will discuss on “The rehabilitation aspects after orthopedic surgery in hemophilia”.

A discussion about the post operative rehabilitation will be done, following which the trainee will learn the assessment and management of these patients, with hands on practical demonstration and follow up under supervision of the physiotherapist in the physiotherapy OPD.

**Day 4:**

New assessments of patients using HJHS, and follow up of the old patients will be continued.

The patients short listed for the Hemophilia Rehab Clinic will be re assessed for discussion by the multi disciplinary team. Presenting the assessed cases in the clinic, and planning the treatment.

The normal biomechanics and the pathomechanics of the knee joint will be discussed by the physiotherapist, to understand the rationale for the different exercises at different stages of rehabilitation.

**Day 5:**

Physiotherapy follow up of patients, and management of the all the patients in the physiotherapy OPD. Hands on practical experience in joint mobilization, and various physiotherapy techniques.

**Week 4:**

**Day 1:**

Assessments, documentation and follow up of hemophilia patients. The trainee will be encouraged to treat at least one patient with resolving hematoma and hemarthrosis, chronic synovitis and hemophilic arthropathy and follow them through the week. They will be monitored by the physiotherapist.
Day 2:

The Physiatrist will discuss the SDL V on Gait analysis. Patients will be followed up in the physiotherapy OPD on a regular basis to see the progress. Practical hands on experience in managing patients with resolving bleed, chronic synovitis and arthropathy.

Day 3:

Patients will be followed up in the physiotherapy OPD on a regular basis to see the progress. Practical hands on experience in managing patients with resolving bleed, chronic synovitis and arthropathy. The homeprogram and targets will be discussed for each patient.

Day 4:

Visit to the Rehabilitation institute to get some hands on practical experience on analysis and interpretation of gait parameters in the Gait Lab. Treatment along with preparations for the Hemophilia Rehab Clinic with re-assessments, documentations and discussions for the respective patients. Presentation of two of the patients on HJHS score, physiotherapy plan and treatment in the clinic.

Day 5:

All clarifications will be done on “Comprehensive management of musculoskeletal complications of hemophilia”. Feed back and review.