

Mobilisation after Lower Limb Deep Vein Thrombosis and Post-Thrombotic Syndrome

Konstantinos Filis*, George Galyfos and Fragiska Sigala

Vascular Division, First Department of Propaedeutic Surgery, University of Athens Medical School, Hippocraton Hospital, Athens, Greece

*Corresponding author: Konstantinos Filis, Vascular Division, First Department of Propaedeutic Surgery, University of Athens Medical School, Hippocraton Hospital, Athens, Greece, Tel: +30-213-208624; E-mail: georgegalyfos@hotmail.com

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Editorial

Deep vein thrombosis (DVT) is one of the commonest cardiovascular diseases, ranking third behind coronary artery disease and stroke [1]. Furthermore, it is one of the major causes for in-hospital morbidity and mortality, leading to severe complications such as pulmonary embolism (PE), post-thrombotic syndrome (PTS) and even death [2]. Local damage to venous intima, venous stasis and hypercoagulability are major predisposing factors, and it is thought that two of these factors must be present for a DVT to develop [3].

Physiotherapists frequently handle in-patients diagnosed with a DVT, and management of such patients has been controversial. For decades, conservative management of DVTs using strict immobilization was based on the theoretical assumption that early ambulation and active range of motion would cause the thrombus to dislodge proximally, migrating to the pulmonary circulation and causing a PE, possibly leading even to death [4]. However, this assumption has never been tested empirically. Moreover, such a conservative treatment approach of bed rest can lead to secondary complications and can thus be detrimental for patients [4].

Concerning proper management, immediate initiation of anticoagulation, and especially low molecular weight heparins (LMWH), has been proved to be the most important first-line treatment, and therefore, is recommended for acute DVT by the latest Guidelines (Level 2B) [5]. Anticoagulants also decrease the risk for subsequent PE and the incidence of thrombi propagation [6]. However, the same Guidelines underline also the importance of early ambulation over initial bed rest (Grade 2C), as well as the preference of treatment at home instead of in-hospital treatment (Grade 1B) [5]. Additionally, many systematic reviews conclude that there is no evidence proving that ambulation by anticoagulated DVT patients in the home setting increases the risk of PE development [4,7]. Aissaoui et al. showed in their recent meta-analysis that early ambulation in patients with DVT with or without PE was not associated with increased risk for DVT progression, new PE or even death [8]. Hence, experimental data also show that even exercise does not increase the risk for new PE, regardless of thrombus status [9]. Therefore, clinicians should be confident in prescribing ambulation in this population.

Fear of PE is the main rationale for bed rest, while pain and swelling are expected to resolve faster during leg elevation. However, the rate of resolution of pain and swelling is significantly faster when the patient ambulates with compression [10]. Immediate multilayer compression bandaging in the acute phase of DVT seems to be effective in reducing edema and complaints in the first week, although it has no effect on thrombus regression or valve incompetence within the following year [11]. Regarding the initiation time of ambulation after setting the diagnosis, there are controversial results in literature. Kiser et al.

underline that the patient should stay immobilized for at least 48 to 72 hours while treated with fully therapeutic dose of anticoagulants [12]. However, Juenger et al. found in a randomized multicentre trial that strict bed rest for at least 5 days is not justified if adequate therapy with LMWH and adequate compression is assured [13].

Finally, PTS is a major chronic complication of DVT that reduces quality of life and has important socioeconomic consequences. More than one-third of patients with DVT will develop PTS, and 5% to 10% of patients will develop severe PTS, which may manifest as venous ulceration [14]. Women, obese patients, patients with proximal DVT and those with varicose veins have an increased risk of PTS [15]. Regarding proper management, research data indicate that immediate compression and early walking also reduces the incidence of PTS [16]. One presumed mechanism of action of this adjunct treatment modality is the increase of shear stress in the microcirculation of the vein wall releasing anti-inflammatory and anti-coagulatory mediators [17]. Daily use of elastic compression stockings for 2 years after proximal DVT appears to reduce the risk as well [14]; however, there is uncertainty about optimal duration of use and compression strength of elastic stockings and the magnitude of their effect.

In conclusion, both physicians and physiotherapists should aim to early mobilize patients with acute thromboembolic disease under proper anticoagulation and compression measures. This practice will obviate both early as well as late complications, reducing both morbidity and mortality in this population.

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