Above-knee versus below-knee graduated compression stockings for deep vein thrombosis prophylaxis after arthroplasty surgery

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Introduction: Patients undergoing arthroplasty surgery that has a particularly high risk for venous thromboembolism. Graduated compression stockings (GCS) are effective in diminishing the risk of deep vein thrombosis (DVT) in hospitalised patients. Currently, there are two lengths of GCS in common use, above-knee and below-knee. However orthopedist and nurses remained uncertain about what length of GCS to apply.

The aim of this study, comparison of effectiveness and patient satisfaction of above-knee and below knee GCS for DVT prophylaxis after arthroplasty surgery.

Materials and Methods: A Medline® database search to identify publications in the English language literature. This initial search resulted in the identification of 26 papers. All of the retrieved papers' abstracts were then manually checked to determine the appropriateness of the topic. In addition, the full reference list of each article was investigated to ascertain whether they included any article not indexed by the Medline database. Finally, a total of 8 published articles were identified that met the inclusion criteria.

Results: In three studies were compared with rates of DVT in above-knee and below-knee stockings groups. In study of Hui et al. is stated that patients who had total knee replacement and wore below-knee stockings had a significantly lower rate of proximal or major calf DVT (p< 0.05). In study of Howard et al. is defined that LMWH and thigh-length stockings reduced the rate of DVT to 2 percent in high-risk surgical patients including orthopedics surgery. In study of Williams ve Owen is stated that no statistical difference in wound complication and DVT rates was found between below-knee and above-knee stockings groups.

In three studies were compared with pressure gradient and effect of venous outflow in stockings groups. In study of Benkő et al. (2001) is stated that there was a highly significant increase in venous outflow in patients in two length GCS (p>0.05). Another studies determined that below-knee stockings are more effective to maintaining correct pressure gradient than above-knee stockings.

In two studies were compared with patient satisfaction from graduated compression stockings. In this studies are stated that the below-knee graduated compression stockings wrinkled and roll down significantly less and significantly more patients reported satisfactory than above-knee.

Conclusion: Below-knee graduated compression stockings are effective as well as above-knee for DVT prophylaxis after arthroplasty. Also patient satisfactory is higher in below knee-length graduated compression stockings than above-knee. But currently, there is little information to choose of the different length of stocking in clinical application. So that large randomized trials will help further assess the efficacy and patient satisfactory of above-knee graduated compression stockings versus below-knee.

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