

# Compression therapy for deep vein thrombosis – why, yes!

The, in these parts, very common use of compression stockings for the prevention of a post-thrombotic syndrome (PTS) has been disputed upon release of the SOX trial in 2014 [1]. However, despite the multicentre, randomised, placebo-controlled (sham stockings) design of the study, amongst others, the low compliance (55% of patients used stockings at least three times per week after two years) and the unclear impact of the new anticoagulants remain lasting points of criticism [2].

The recently published OCTAVIA study [3] aims to clarify the question of a benefit from compression therapy in deep vein thrombosis (DVT). Designed as a multicentre, single blind, non-inferiority, randomised controlled trial,  $n = 522$  patients with ultrasound proven DVT were treated with compression stockings for 12 months. Thereof,  $n = 262$  were assigned to continue compression therapy up to 24 months, whereas the remaining patients ( $n = 256$ ) ended compression therapy after 12 months. Primary endpoint was the occurrence of a PTS at 24 months. Without prolonged compression therapy, PTS was diagnosed according to the standardised Villalta scale in 19.9% of patients, compared to 13.0% under continuance of compression therapy (HR 1.6). Non-inferiority was defined as the upper boundary of the 95%-confidence interval of the absolute difference between both arms not exceeding 10%. Thus, with an absolute difference of 6.9% in the occurrence of PTS and an upper limit of the 95%-CI at 12.3%, non-inferiority was not reached in favour of the prolonged compression use. Recurrent ipsilateral DVT did not significantly differ between ended (3.1%) and continued (2.3%) use of compression therapy. There were two cases of death, both in the prolonged compression therapy arm. However, the patients' causes of death were not associated to DVT or sequences (end stage pulmonary carcinoma and heart failure after myocardial infarction). Quality of life as assessed by the VEINES QOL/Sym questionnaire served as main secondary endpoint of the trial. Both, overall quality of life (VEINES QOL) and symptom associated quality of life

(VEINES Sym) did not differ between ended and prolonged use of compression stockings.

In summary, the OCTAVIA study showed the use of compression stockings over one year compared to a prolonged two-year usage to be not non-inferior. Unlike in the SOX trial, adherence was very high with 84% of patients wearing their compression stockings at least six days per week over the course of 24 months in the OCTAVIA trial. However, it has to be kept in mind that patients who developed a PTS in the first year after DVT were excluded from the study. Thus, the information on a beneficial effect of prolonged compression therapy is restricted to late-onset PTS (>12 months). But for all that, the number needed to treat to prevent one PTS case by continued compression therapy was only 14! Thus, the use of compression stockings for two years after DVT proves to be a reasonable choice, particularly considering the non-differing quality of life in both the treatment arms and low costs of the therapy.

## References

1. Kahn SR, Shapiro S, Wells PS, et al. SOX trial investigators. Compression stockings to prevent post-thrombotic syndrome: a randomised placebo-controlled trial. *Lancet* 2014; 383:880–8.
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3. Mol GC, van de Ree MA, Klok FA, et al. One versus two years of elastic compression stockings for prevention of post-thrombotic syndrome (OCTAVIA study): randomised controlled trial. *BMJ* 2016; 353:i2691.

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