Skip the Compression Stockings Following DVT

Although commonly used, compression stockings do not effectively prevent postthrombotic syndrome.

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PRACTICE CHANGER

Do not recommend elastic compression stockings to decrease the incidence of postthrombotic syndrome after deep vein thrombosis.[1]

STRENGTH OF RECOMMENDATION

B: Based on a large randomized controlled trial[1]

ILLUSTRATIVE CASE

A 56-year-old man presents to your clinic three days after receiving a diagnosis of lower extremity deep vein thrombosis (DVT). He was prescribed warfarin (5 mg/d) with enoxaparin bridging (120 mg/d). He has read about postthrombotic syndrome (PTS) online and is very concerned about this possible adverse effect. He asks about using elastic compression stockings (ECS). What should you tell him?

PTS can be a frustrating, debilitating condition. Its clinical features range from minor limb swelling to severe edema and pain, irreversible skin changes, and leg ulcerations.[2] It occurs in 25% to 50% of patients after DVT.[3] Because current PTS treatments are not very effective, prevention is essential.[4,5]

Patients are frequently encouraged to wear ECS after DVT to reduce the incidence of PTS by decreasing venous hypertension and reflux. These stockings are expensive and uncomfortable. Prior research suggested that use of ECS can reduce PTS incidence by half, but the studies were small, single-center, and not placebo-controlled.[6,7]

STUDY SUMMARY

RCT sets aside a common practice

Kahn et al[1] conducted a randomized, placebo-controlled trial of active versus placebo ECS in patients from 24 centers in the United States and Canada who'd had an ultrasound-confirmed proximal DVT (in the popliteal or more proximal deep leg vein) within the previous 14 days. Most patients received standard anticoagulation therapy to treat their DVT (five to 10 days of heparin and three to six months of warfarin). Patients were excluded if they had received thrombolytics, had arterial claudication, had a life expectancy of less than six months, were unable to put on ECS due to physical disabilities or allergy, or were unable to participate in follow-up visits.

Patients were randomly assigned to wear active (30 to 40 mm Hg graduated) ECS or identical-looking placebo ECS (< 5 mm Hg compression at the ankle) for two years. Providers, study personnel and statisticians, and patients were all blinded to treatment allocation. Patients were asked to wear the stocking on the affected leg each day from waking until bedtime.

Follow-up occurred at one, six, 12, 18, and 24 months. The primary outcome was cumulative incidence of PTS diagnosed at six months or later using the Ginsberg criteria of ipsilateral pain and swelling of at least one month's duration.[8] Secondary outcomes included severity of PTS, leg ulcers, recurrence of venous thromboembolism (VTE), death, adverse events, venous valvular reflux, and quality of life (QOL). Outcomes were measured objectively through use of a validated scale (the Villalta scale) for PTS severity and two questionnaires to assess QOL.[9-11]

There were 409 patients in the ECS group and 394 in the placebo group. Baseline characteristics, including BMI, VTE risk factors, and anticoagulation treatment regimens, were similar between groups. The average age of participants in the study group was 55.4 years and in the placebo group, 54.8 years. Men comprised 62.4% of the active group and 57.9% of the placebo group. Approximate-

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ly 90% of the participants in both groups were white.

At one month, approximately 95% of participants in both groups used the stockings; at 24 months, that was reduced to a little less than 70%. The percentage of people who used the stockings for at least three days per week was similar in both groups.

The cumulative incidence of PTS during follow-up was 14.2% in the active group and 12.7% in the placebo group (hazard ratio, 1.13). There were no differences in any of the secondary outcomes. Prespecified subgroup analyses found that age, BMI, and severity of DVT had no effect on outcomes. There was a marginal benefit for ECS for women versus men, but this does not likely reflect a true difference because the confidence intervals surrounding the hazard ratios for men and women overlapped and crossed the null value.

WHAT'S NEW

New evidence contradicts previous studies

Two prior studies showed that using 30 to 40 mm Hg ECS decreased the incidence of PTS after proximal DVT.[6,7] However, these were smaller, open-label, single-center studies. This study by Kahn et al[1] was the first placebo-controlled, randomized, multicenter study that used validated instruments to measure PTS and QOL. It found no benefit in using ECS, thus contradicting the results of the prior studies.

There are currently no guidelines or consensus statements that recommend for or against the use of ECS after DVT.

CAVEATS

High nonadherence rates might have affected results

In both groups, adherence to the assigned intervention diminished throughout the study (from 95% at one month to slightly less than 70% at two years). Theoretically, this could have affected efficacy outcomes. However, the decrease was similar in both groups and represents what is observed in clinical practice. A prespecified per protocol analysis of patients who wore their ECS more regularly found no benefit.

It is possible that a "placebo effect" could explain the lack of difference between groups. However, the placebo stockings provided virtually no compression, and the two-year cumulative incidence of PTS in both the treatment and placebo groups was similar to that seen in control groups in prior studies.[6,7]

Finally, the incidence of PTS in this study was much lower than the 25% to 50% incidence reported previously. Kahn et al[1] suggested that this was because they used more stringent and standardized criteria for PTS than was used in previous research.

CHALLENGES TO IMPLEMENTATION

There are no barriers to ending this practice

We can identify no challenges to implementation of this recommendation. **CR**

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