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Review Post-thrombotic syndrome and compression therapy

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ABSTRACT

Aim: The aim of this review is to try to explain the controversy by critical analysis of published randomized controlled trials on the value of elastic compression stockings in the treatment of acute deep vein thrombosis in prevention of post-thrombotic syndrome.

Methods: A research was made through Medline and Embase databases to identify relevant original articles, with the following keywords: post-thrombotic syndrome, deep venous thrombosis, venous thromboembolism, compression stockings, prevention and compliance.

Results: We identified six randomized controlled trials. Brandjes et al. (1997) [2], Ginsberg et al. (2001) [3], Partsch et al. (2004) [4], Prandoni et al. (2004) [5], Aschwanden et al. (2008) [6], Kahn et al. (2014) [11]. Their conclusions and value are analyzed.

Conclusion: Prescription of elastic compression stockings for the prevention of post-thrombotic syndrome is now in doubt including long-term compression treatment. Two major issues remain: – We need randomized control trials with long-term outcome to determine if compression is effective to prevent post-thrombotic syndrome according to the precise location of the initial deep venous thrombosis. – Compliance is also a major issue. If compression is efficient how can we improve adherence.

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1. Introduction

Until 2014 medical compression was considered a necessity for preventing postthrombotic syndrome (PTS) after deep venous thrombosis (DVT), but the SOX trial, a randomized controlled trial (RCT) published by a recognized epidemiologist group casted a serious doubt on this assertion [1].

The aim of this review is to underline the controversy of this article by comparing its conclusion to those of previously reported RCTs on the topic.

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2. Methods

A research was made through Medline and Embase databases to identify relevant original articles but not abstract with the following key words: postthrombotic syndrome, deep venous thrombosis, venous thromboembolism, compression stockings, prevention, compliance.

3. Results

No RCT was identified concerning compression after distal DVT. Conversely we identified 6 RCTs on compression for proximal DVT to prevent PTS. (Tables 1–6) [1–6]. Their analysis is interesting. (i) The only one, which provides precise data on iliofemoral DVT is

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Brandjes.

Article	Type of study (patients number)	Proximal DVT location	Type of compression (patients number)	F-U	Date of initial compression	Compliance	Assessment	Outcome
Bran Brandjes (2) 19919 1997	Single center (194)	Iliac Vein 0 CFV ?	Group 1 : Compression knee length (96).	2-Y	2–3 W after DVT	Always: 76%	Brandjes Scoring system	Group 1 Moderate or mild 20% Severe 11% <u><i>P</i> < 0.001</u> Group 2 Moderate or mild 47% Severe 23%
			Group 2: No compression (98)			Usually: 16.7% Never or occasion- ally: 7.3%	–Mild to moderate –Severe	

Abbreviations: CFV=common femoral vein; DVT=deep venous thrombosis; F-U=follow-up; W=week; Y=year.

Table 2

Ginsberg RCT.

Article	Type of study (pa- tients number)	DVT location	Type of compres- sion or no com- pression (patients number)	F-U	Date of initial compression	Compliance	Assessment	Outcome
Ginsberg (3) 2001.	Study 1 Single center (120) – Asymptomatic pa- tients with no deep venous valve incompetence	Distal and Proximal.	No compression	55M (mean)	No compression		Global Rating questionnaire at base line and 3-M interval. Failure was defined as:	Presence of PTS 5%
			Group A: Compression knee length (24)	55M (mean) 59M (mean)		No in- formation	Pain and/or swel- ling not improved or worse after the first 3-M treatment	Group A Treatment failure 0% <i>P=NS</i>
	Study 2 Single center (47) – Asymptomatic pa-		Group B Placebo stockings (23) 1Y after DVT				interval.	Group B Treatment failure 4.3%
	tients with deep venous valve incompetence	No more data	Group A BK stocking (14) AK stocking (4)	28M (mean) 26M (mean)	Compression at 1-Y		Symptomatic dete- rioration during any 2 consecutive treatment intervals	Group A Treatment failure 61% <u>P</u> = <u>NS</u>
	Study 3 Single center (35) – Symptomatic PTS with deep venous valve incompetence		Group B BK stocking (13) AK stocking (4)				Symptoms causing 5 or more days of work absenteeism or inability to per- form housework during 3-M interval. Venous ulcer	Group B Treatment failure 59%

Abbreviations: AK=above knee; BK=below knee; D=day; DVT=deep venous thrombosis; M=month; PTS=posthrombotic syndrome; W=week; Y=year.

Kahn's article [1]. This issue is crucial as we know that this location is responsible of the most severe PTS [7–10]. (ii) There is a consensus that Villalta score is appropriate to measure outcome after treatment [11], but it has been used only in 3 RCTs [1,4,6] knowing that Brandjes score is similar to the Villalta one. Quality of Life (QoL) score has been used only in Kahn's RCT [1]. The discrepancy makes it difficult to compare the outcome of the 6 RCTs. (iii) Ginsberg and Aschwanden RCTs are less informative as patients are not assessed at the time of diagnosis of DVT, but included in the studies after 12 and 6 months, respectively, but they still provide interesting information.

To summarize Brandjes [1] and Prandoni [4] concluded that elastic compression could prevent PTS if compliance was very high, but they did not report on the number of iliofemoral DVT. Conversely Kahn [6] in her large RCT did not find any benefit using compression. However, the location of iliofemoral DVT was reported, but the compliance was low.

Ginsberg's trial is not easy to analyze as it is divided into three

studies and it is difficult to determine if the patients wore compression the first year after initial DVT. Consequently Ginsberg's conclusion i.e. "most patients do not have PTS 1 year after proximal DVT and do not require stockings" must be interpreted with reservations [2]. Partsch' RCT conclusion i.e. « immediate mobilization with compression in the acute stage of DVT reduces the incidence and the severity of PTS » is also difficult to interpret as it is unclear if early mobilization or early compression provided benefit [4]. More informative is Aschwanden's study. After compression during 6-month prolonged compression therapy provides symptom improvement in C_{2-3} patients during one year but not thereafter [5].

4. Discussion

As pointed out in the 6th Pacific Vascular symposium the term proximal DVT is not satisfactory as this heading encompasses any Download English Version:

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