European Journal of Obstetrics & Gynecology and Reproductive Biology 185 (2015) 156–163

Contents lists available at ScienceDirect

European Journal of Obstetrics & Gynecology and Reproductive Biology

journal homepage: www.elsevier.com/locate/ejogrb

Review

Trans-venous occlusion of incompetent pelvic veins for chronic pelvic pain in women: a systematic review

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ARTICLE INFO

Article history:
Received 15 August 2014
Received in revised form 8 December 2014
Accepted 9 December 2014

Keywords:
Systematic review, Pelvic vein incompetence
Embolization
Chronic pelvic pain
Pelvic congestion syndrome
Venous occlusion

ABSTRACT

Chronic pelvic pain (CPP) affects 24% of women worldwide; the cause cannot be identified in 40% despite invasive investigations. Dilated, refluxing pelvic veins may be a cause of CPP and treatment by *trans*-venous occlusion is increasingly performed when gynecological causes are excluded, but is it effective?

A systematic review of the literature published between 1966 and July 2014 was conducted. Two authors independently reviewed potential studies according to a set of eligibility criteria, with a third assessor available as an arbiter.

Thirteen studies including 866 women undergoing *trans*-venous occlusion of pelvic veins for CPP were identified (Level of evidence: one study grade 2b, 12 studies grade four). Statistical significant improvements in pelvic pain were reported in nine of the 13 studies. Technical success was reported in 865 of 866 (99.8%) with low complication rates: coil migration in 14 women (1.6%), abdominal pain in ten women (1.2%) and vein perforation in five (0.6%). In a study on varicose veins of the legs, recurrence was seen in 13% of 179 women 5-years following coil embolization.

Subjective improvements in pain were seen in all 13 studies after treatment by *trans*-venous occlusion. All 13 studies were of poor methodological quality. Complication rates were low and no fatalities occurred. Well-designed studies are essential to determine whether pelvic vein incompetence (PVI) is associated with CPP, and to explore whether *trans*-venous occlusion of PVI improves quality of life for these women.

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http://dx.doi.org/http://dx.doi.org/10.1016/j.ejogrb.2014.12.011
0301-2115/

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Introduction

Chronic pelvic pain (CPP) is defined as continuous or intermittent lower abdominal or pelvic pain of at least six months duration [1]. It is a major health problem with a worldwide prevalence of 24% and accounting for 20% of all gynecology outpatient appointments in the UK [2]. Primarily affecting young women, CPP is associated with significant mental, social and physical burden for sufferers, leading to reduced quality of life, loss of employment, marital discord and greater use of healthcare resources [3,4]. Its management has remained a challenge for healthcare professionals, with nearly 55% of women with CPP having no obvious cause for their pain on laparoscopy [3,5].

Pelvic vein incompetence (PVI) is thought to be a possible cause for CPP. Despite being thought to affect 15–20% of women, remarkably we know very little about it and it is rarely diagnosed in the United Kingdom [6,7]. Taylor in 1949 first described how incompetent and distended pelvic veins might cause symptoms of pain, dyspareunia and menstrual dysfunction [8–10]. Since then, despite being frequently reported to be a cause for CPP in published literature, there have been no adequate studies on the frequency of PVI in women with CPP. It is often missed on laparoscopy as the distended pelvic veins empty when the patients are tilted head down.

Treatments suggested for PVI include total abdominal hysterectomy, pelvic vein ligation or occlusion, and hormonal therapy [11]. Medroxyprogesterone acetate (MPA) has been shown to temporarily improve pain scores but was associated with side effects including weight gain and acne [12]. Pelvic vein ligation is now rarely performed and total abdominal hysterectomy is unacceptable to younger women.

Trans-venous occlusion of pelvic veins using percutaneous cannulation of a jugular or femoral vein and insertion of coils and sclerosants into the incompetent vein, leads to permanent occlusion by thrombosis. Despite the absence of any adequate randomized control trial (RCT) on the effectiveness of *trans*-venous occlusion, it is becoming increasingly performed in the private sector and throughout Europe, at considerable cost to sufferers.

This systematic review was designed to explore the role of *trans*-venous occlusion in the treatment of CPP and to assess clinical effectiveness and safety.

Methods

Types of studies

We included published randomized controlled trials (RCT), quasi-control trials, cohort studies, and case–control studies. We excluded unpublished studies or those including less than 15 participants. Review articles, editorials, letters, and case reports were also excluded.

Types of participants

Women with CPP, defined as continuous or intermittent lower abdominal or pelvic pain lasting for more than six months (not occurring exclusively with menstruation, intercourse or pregnancy) and with pelvic congestion symptom, defined as CPP thought to be caused by PVI, were included. We excluded studies examining specific cohorts of women known to have solely endometriosis, primary dysmenorrhea or chronic pelvic inflammatory disease.

We also excluded any study in which the diagnosis of PVI has not been confirmed by imaging such as reflux venography, *trans*-vaginal ultrasound, CT or MR venography.

Types of interventions

Studies on *trans*-venous occlusion using metallic coils or foam/gel sclerotherapy were included.

Search methods for study identification

We searched all published studies to 8 June 2014 with no language restriction.

Several large electronic searches were conducted on the following databases: MEDLINE, EMBASE, Cochrane Central Register of Controlled Trials (CENTRAL), CINAHL, MEDION, SIGLE, LILACS, PsycINFO, Index of scientific and technical proceedings, DARE, and the British Nursing Index.

The search consisted of a combination of MeSH or keywords (chronic pelvic pain, pelvic congestion syndrome (PCS), pelvic vein incompetence) combined using 'and' with MeSH or keywords for intervention (embolization, venous occlusion, sclerotherapy). The search strategy adopted is shown in Appendix 1. The reference lists of relevant publications and review articles were searched. We hand searched relevant journals, abstracts and conference proceedings and several gray literature sources.

Selection of studies

Two authors independently reviewed potential studies for compliance with the inclusion criteria. A third assessor was available as an arbiter when there was uncertainty regarding eligibility. The selection process is shown in Fig. 1.