Journal of
Obesity & Weight Loss Therapy

Musil, J Obes Weight Loss Ther 2016, 6:3
DOI: 10.4172/2165-7904.1000310

Short Communication Open Access

Chronic Venous Disease, Obesity and the Risk of Venous Thromboembolism in a Czech Population

Dalibor Musil*

Department of Internal Medicine Cardiology, University Hospital Olomouc, Czech Republic

Short Communication

Venous thromboembolism (VTE) is a multifactorial disease. Reported risk factors vary widely with uncertainty as to the magnitude and independence of each factor. The major risks for VTE are prior history of VTE, older age, obesity, family history of VTE, oral estrogen/progestin therapy and varicose veins. The epidemiologic case-control study Sirius defined chronic venous insufficiency and obesity in medical outpatients as among the five most important intrinsic risk factors for deep vein thrombosis (DVT). We investigated the prevalence of VTE (symptomatic deep vein thrombosis and/or pulmonary embolism) and superficial vein thrombosis (SVT) in patients suffering from chronic venous disease (CVD) and the impact of BMI as an intrinsic factor for risk of VTE and SVT in a Czech population [1,2].

A VTE episode in the personal history occurred in 5% of patients with CVD which is comparable with the prevalence of VTE in the general European population. A history of episodes of SVT was found in 20.3% of patients as it is a condition most often associated with CVD. There was clinical presentation of VTE mostly as DVT (87.5%), in 9.4% as DVT with pulmonary embolism and only in 1 patient (3.1%) as pulmonary embolism. In 62.5% of cases thrombosis occurred in the presence of recognized thrombotic risk factors (provoked VTE) and in 37.5% it was unprovoked or idiopathic. The most common risk factors were trauma (45%) and surgery (20%) on the lower limbs, in women, estrogen hormone therapy or pregnancy (20%).

Increase in BMI was associated with a steep increase in prevalence of VTE. A history of VTE episode was found in only 2.4% patients with a BMI ≤ 25 kg/m^2, for the BMI 26-29 kg/m^2 group in 4.3% patients but with a BMI ≥ 30 kg/m^2 it was 9.1% of patients. BMI was significantly higher in CVD patients with a history of VTE. The risk of VTE rose very significantly (4.1 times) in obese compared with normostenic patients.

When we inspected SVT in the personal history, the BMI was much higher in SVT-positive patients than SVT-negative patients but only in women, not in men. In all patients with CVD, the risk of SVT was very significantly increased in older non-smokers with a BMI ≥ 25 kg/m^2 and in all female smokers with a BMI ≥ 25 kg/m^2. In smoking men, the risk was significantly elevated in older age but not in those with a BMI ≥ 25 kg/m^2.

Obesity is reported to lead to a 2 to 3 fold higher risk of venous thrombosis in both sexes. The risk associated with severe obesity (BMI ≥ 40 kg/m^2) is even higher [3]. Our study in patients with CVD, showed that obesity was associated with VTE episodes regardless of sex. The risk of VTE was more than 4 times higher in obese than in normosthenic patients, significantly higher than reported in the general obese population. For comparison, the relative risk for VTE is increased approximately 4-fold among patients with active cancer and 2 to 3-fold in peri-postmenopausal women who use systemic combined estrogen-progestin treatment [4]. Overweight in CVD patients was not associated with significantly increased risk for VTE, although the statistical significance was borderline, suggesting potential VTE risk. A community based, prospective study of 19,293 men and women, over 10 years, reported a 1.5 hazard ratio for overweight persons [5]. This finding suggests that avoidance of obesity or prophylaxis in patients with this condition may prevent some VTEs.

Patients with CVD aged ≥ 70 years and obesity (BMI ≥ 30 kg/m^2) had with very significantly increased risk of VTE, comparable with previous episodes of VTE (five-fold incidence over baseline risk in patients with VTE in the personal history) [6]. Age over 70 and obesity in our study were shown to be moderate risk factors with an Odds Ratio of 2 to 9. These two factors are closely related as body weight (BMI) increases with age. Obese patients with CVD were at higher risk for VTE than obese people in the general population. Smoking in this study was not revealed as a significant risk factor with one exception: smoking increased the risk in obese patients.

Until recently, the literature on risk factors for SVT in CVD patients (so called varicose SVT) has been relatively poor. Most authors focused on SVT accompanying VTE, malignancies, vasculopathies, autoimmune diseases and drug intake. Of the long list of additional risk factors, apart from CVD, for SVT (43 items) recently published on Medscape, listed in order were varicose veins, obesity, age older than 60 years and cigarette smoking [7]. In our group of outpatients, the risk of SVT was increased significantly in overweight people and very significantly in obese patients. Overweight and obesity were revealed as a very significant risk factor only in women, not in men. Smoking plus BMI ≥ 25 kg/m^2 in women almost doubled the risk of SVT. The risk of SVT in CVD was associated with female gender and in both genders to the same extent, age-related.

One caveat of this study was that patients were evaluated for symptomatic VTE only. Owing to the silent (asymptomatic) nature of VTE, the total prevalence rate of this disease remains elusive.

References

1. Musil D, Kaletová M, Herman J (2016) Risk factors for superficial vein thrombosis in patients with primary chronic venous disease. Vasa 45: 63-66.
2. Musil D, Kaletová M, Herman J (2016) Venous thromboembolism - prevalence and risk factors in chronic venous disease patients. Phlebology
3. Stein PD, Beemath A, Olson RE (2005) Obesity as a risk factor in venous thromboembolism. Am J Med 118: 978-980.
4. Bergendal A, Kieler H, Sundström A, Hirschberg AL, Kocoska-Maras L (2016) Risk of venous thromboembolism associated with local and systemic use of hormone therapy in peri- and postmenopausal women and in relation to type and route of administration. Menopause.

***Corresponding author:** Dalibor Musil, Department of Internal Medicine Cardiology, University Hospital Olomouc, Czech Republic, E-mail: musil.dalibor@o2active.cz

Received April 26 2016; **Accepted** May 09, 2016; **Published** May 12, 2016

Citation: Musil D (2016) Chronic Venous Disease, Obesity and the Risk of Venous Thromboembolism in a Czech Population. J Obes Weight Loss Ther 6: 310. doi:10.4172/2165-7904.1000310

5. Tsai AW, Cushman M, Rosamond WD, Heckbert SR, Polak JF, et al. (2002) Cardiovascular risk factors and venous thromboembolism incidence: the longitudinal investigation of thromboembolism etiology. Arch Intern Med 162: 1182-1189.

6. Cusham M (2007) Epidemiology and risk factors for venous thrombosis. Semin Hematol 44: 62-69.

7. Rosch AJ, Khait L (2014) Superficial thrombophlebitis. Medscape.