

Clinic for Angiology

# Venous Hypertension in Chronic Venous Insufficiency

25th World Congress of the International Union of Angiology  
Prague - Tuesday, July 3 2012

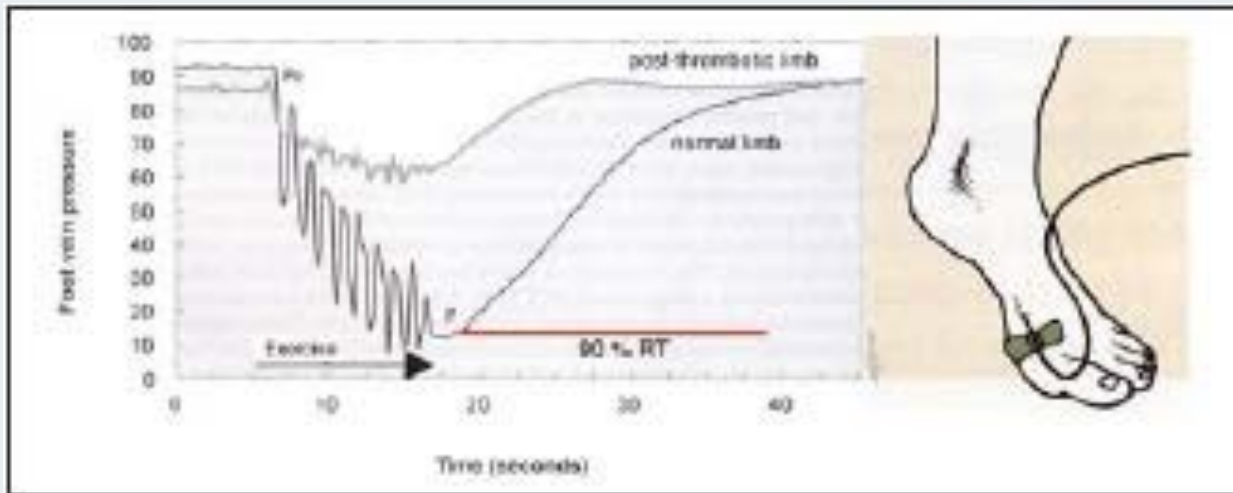


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# Purpose

Venous pressure measurement currently is only feasible using an invasive approach with puncture of a dorsal foot vein (ambulatory venous pressure measurement, AVPM).



# Purpose

To investigate non-invasively the changes in peripheral venous pressure (PVP)

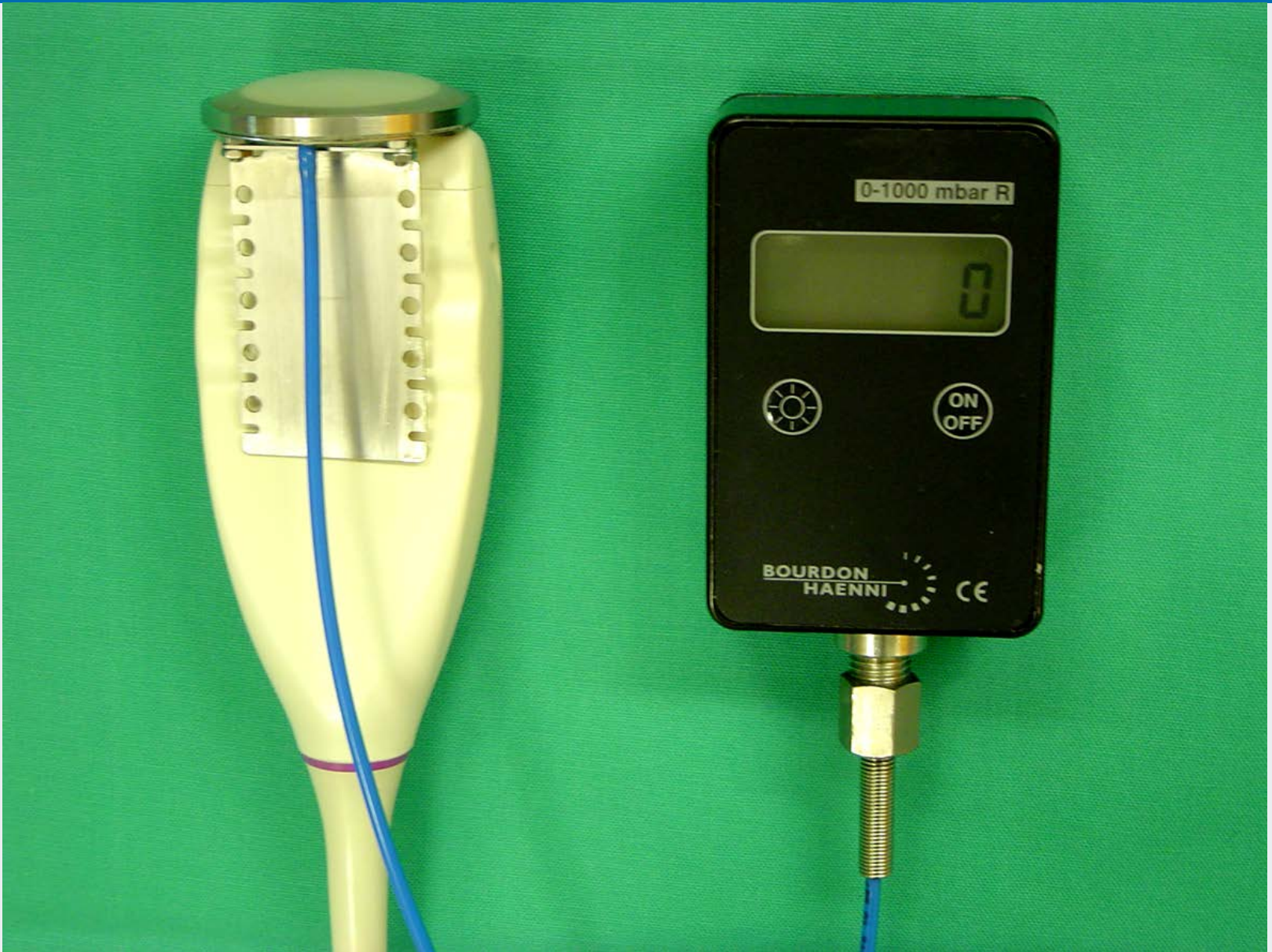
- during Valsalva maneuvers
- in patients with complete insufficiency of the great saphenous vein (Hach IV)
- compared to healthy controls.

## Material and Methods

Controlled compression ultrasound (CCU) was used for measurement of PVP of the distal saphenous vein.

A pressure manometer displays the pressure needed to compress the vein completely.

PVP was measured in supine position at rest and during a standardized Valsalva maneuvers.





# Subjects

20 healthy controls

(12 male, 8 female), mean age 30 years (18-64)

19 patients

with at least one Hach IV leg (13 male, 6 female), mean age 53 years (24-75) were included.

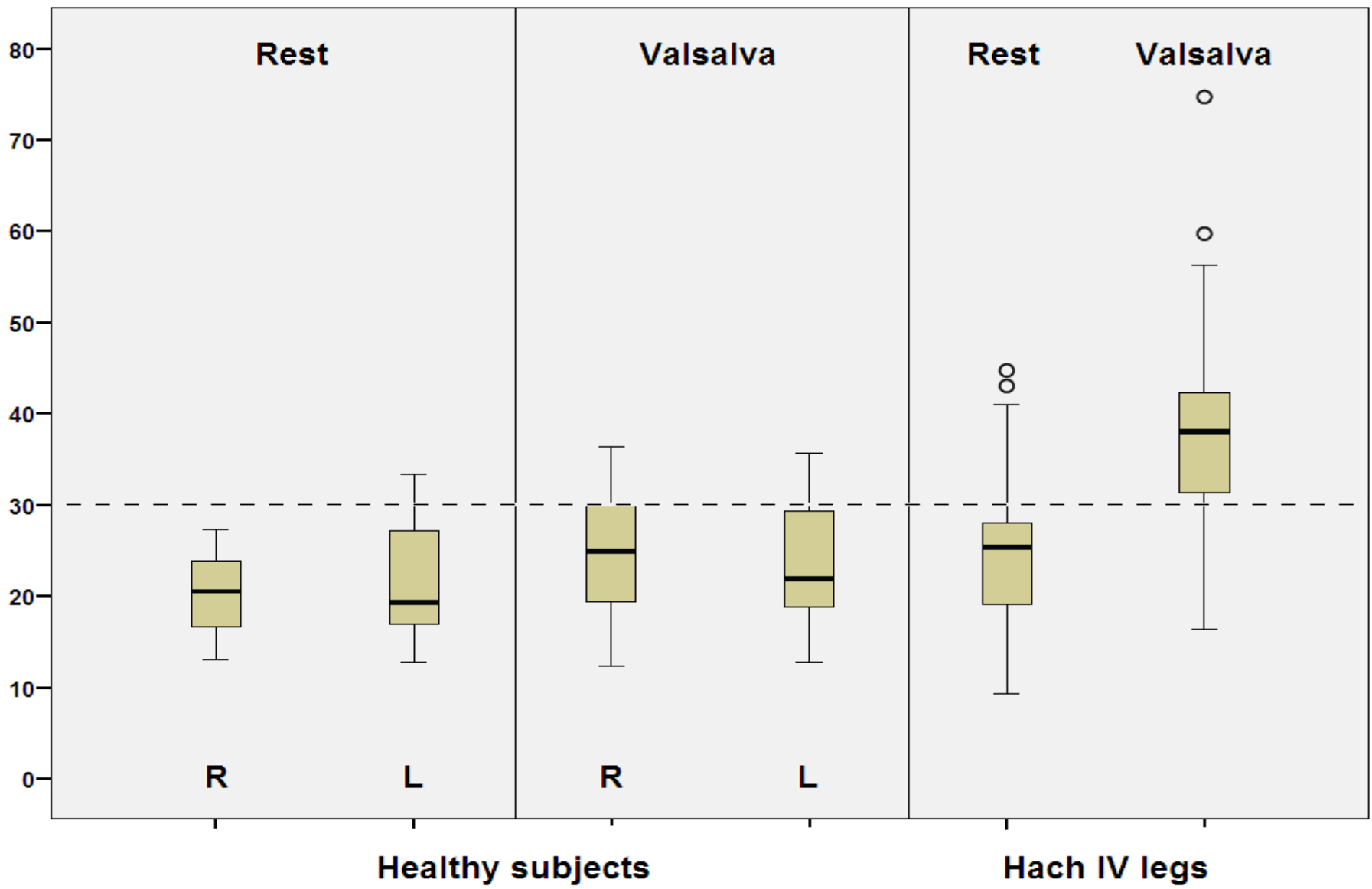
40 control legs were compared with 25 Hach IV legs.

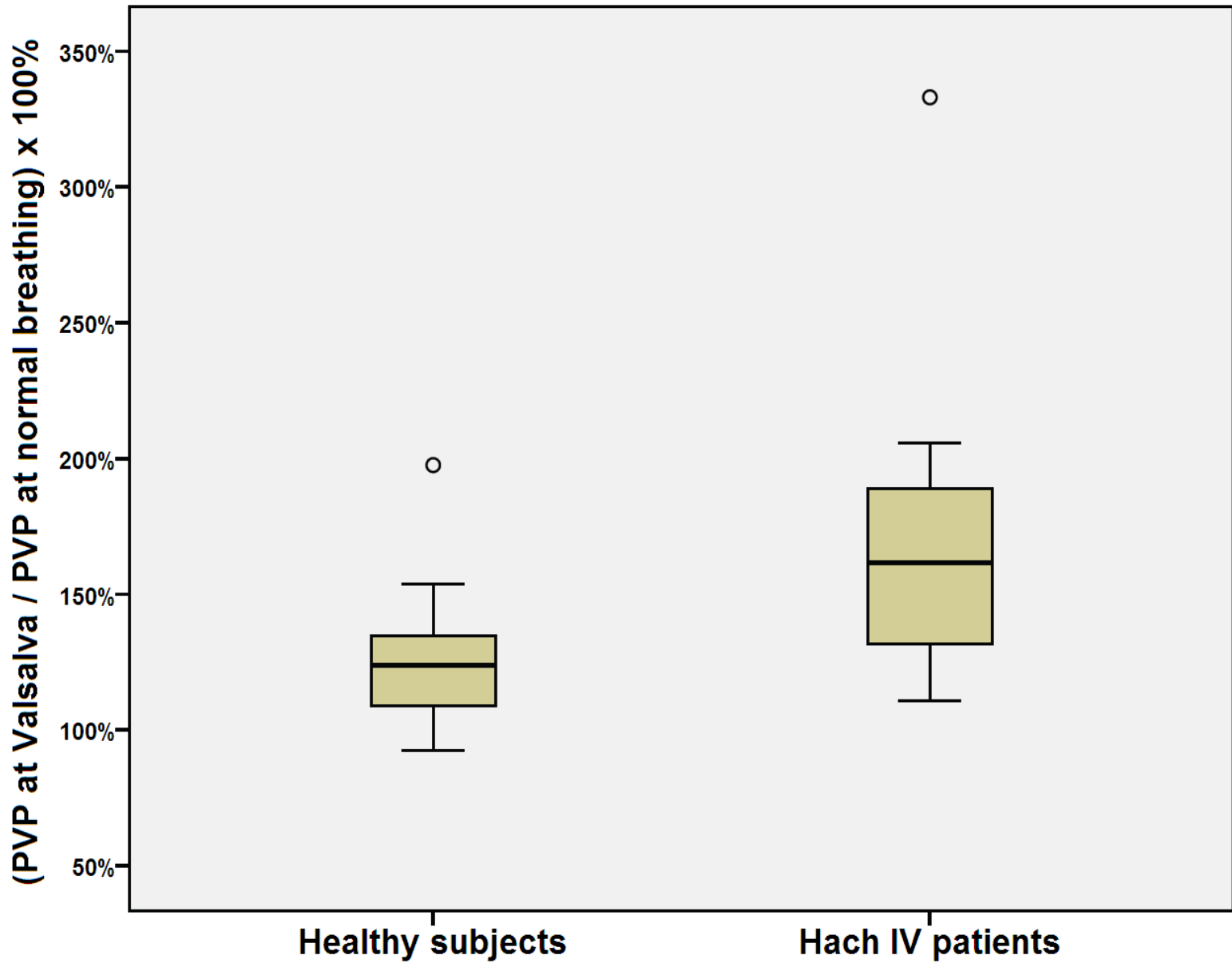
# Results





PVP [mbar]

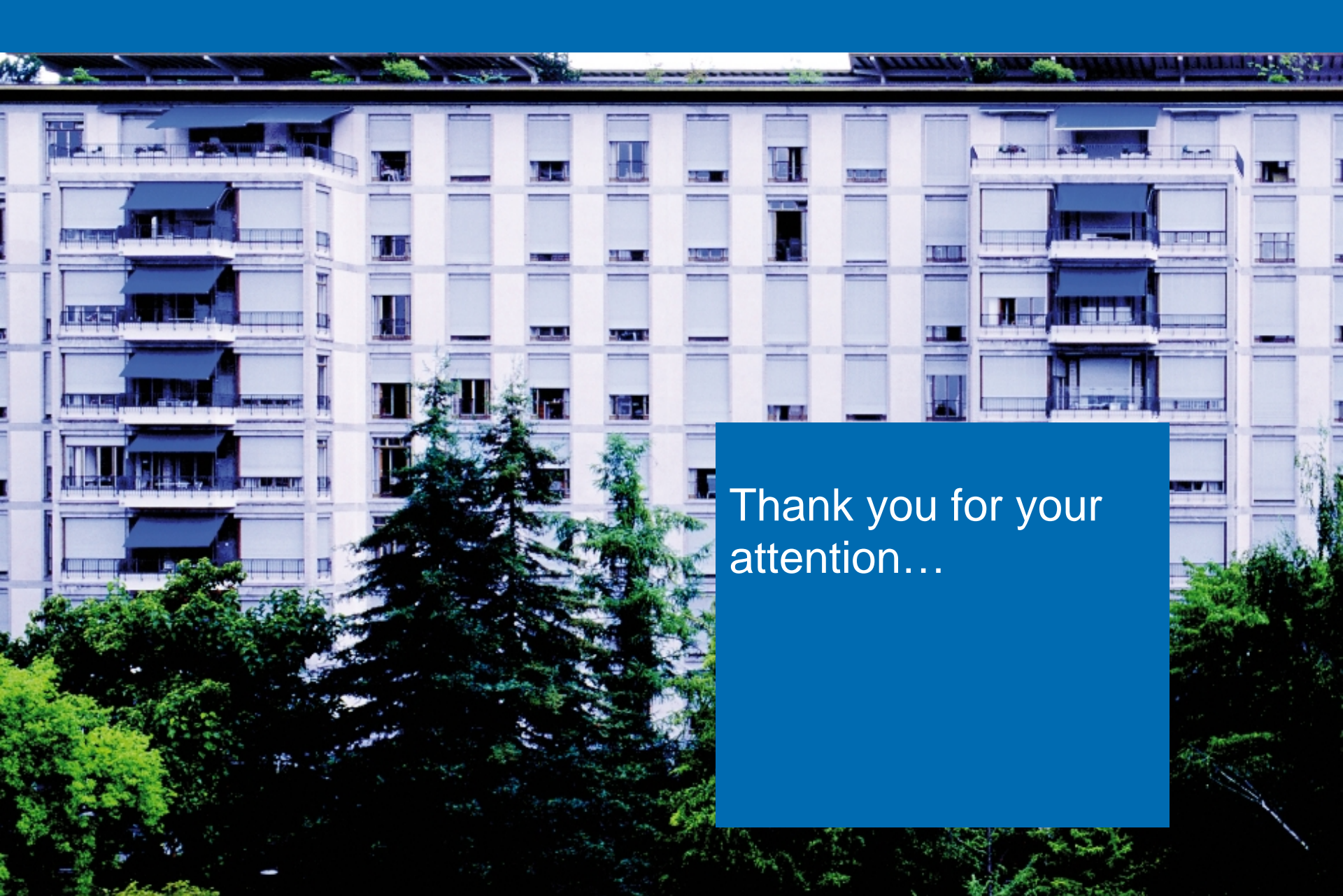




# Conclusions

In this first study using CCU for PPV measurement of the great saphenous vein it was possible to detect venous hypertension during Valsalva maneuver in Hach IV patients. A cut-off during Valsalva of 30 cmH<sub>2</sub>O may be a good value to detect venous insufficiency.

PVP measurement using CCU is feasible and a valuable tool to investigate venous hypertension in venous valve insufficiency non-invasively.



Thank you for your  
attention...

