Upper limb lymphoedema: The value of compression lies in compliance

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Introduction.– The main problem optimizing the conservative treatment of an irreversible upper limb lymphoedema (IULL) is the choice of the effective compression (P).

Purpose.– To investigate whether IULL compliance influences the rate of leg swelling reduction.

Method.– With a plethysmograph (SeriMedPL2Ô), the variation of the volume (6Vol) was observed continuously 10 cm below the elbow. Three different P were tested (30, 90 et 150 mm Hg) in a random succession. The study was done twice: at the beginning and at the end of an intensive conservative treatment. The study was achieved on 13 consecutive women (61 y) with a voluminous (+ 74% 6Vol) and longstanding (7 y) IULL.

Results.– Results showed a strong interaction between Vol and P. The data allow drawing a hyperbola with a left convexity, turned to the axis of the Vol. The initial part of the curve is steep: for a little variation of P, there is a great variation of Vol. But with growing IULL, the curve sloped slowly downward. The interstitial distension, the residual capacitance was reduced. Beyond this swivel, it becomes necessary to raise, more and more, the compression to mobilize fewer oedemas. Finally, the curve became a horizontal: the expansion of oedema was stopped.

Discussion.– In highly compliant tissue, as in old ULLL, the elastic tissue is overstretched by chronic oedema and the elastic recoil is poor. So, with low compression or hydrostatic pressure, it is extremely difficult reducing ULLL but there is a very high potential in recurrence. The results could give further support to the concept that the oedema decongestion yield varies according with the 6Vol - P ratio that is to say to the consistence.

References

CO18-006–EN
Interest of cardiac output (CO) measurement by Inert-Gas-Rebreathing method (IGR) in cardiac rehabilitation

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Objective.– The determination of maximum heart rate (HR Max) by a predictive equation has been the subject of numerous studies [1]. The widely used Fox's formula (220-age) has limitations, especially in cardiovascular disease [2]. The standardized walking tests could be used to have a better estimation. We propose the search of a predictive mathematical model, based on parameters involved in effort's ability and results of two walking tests: 6-min walk test (T6 min) and 200-m fast-walk test (T200 M), validated in subjects over 55 years [3].

Patients and methods.– Application of T200 M, T6 min and maximal exercise test (treadmill) in 66 male patients with stabilized coronary disease (end of rehabilitation) over 55 years (63.7 ± 6.5 years) without other limiting factors in the effort or cardiac arrhythmias. Construction of mathematical models including age, anthropometric parameters (weight, height), FC rests T200 FC, FC T6 min, predicting HR max.

Results.– No intolerance to the practice of walking tests. The most valid model (R² = 0.45) is the formula: ¼ age (years) 0.7 + FC + T200 M 53 × height (cm) –8.

Discussion.– The use of results of fast walk test (T200 M), in combination with the parameters of age and height allows an approach to the HR max, in good safety conditions. This must be confirmed in larger cohorts of patients before proposing an alternative to the maximal exercise test.

References

CO18-005–EN
Prediction of maximal heart rate with standardized walking tests in coronary disease

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