Spolne razlike u hemodinamici bolesnika s teškim popuštanjem srca

Gender differences in hemodynamics of patients with severe heart failure

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CILJ RADA: usporedba hemodinamskih osobitosti između ženskih i muških bolesnika s teškim srčanim popuštanjem koji se razmatraju za transplantaciju srca.

PACIJENTI I METODE: u 57 zarednih bolesnika s teškim popuštanjem srca učinjena je kateterizacija srca kao dio prijetransplantacijske obrade.

REZULTATI: 43 muškarca i 14 žene dobi 56 ± 10 godina i slijedeće etiologije srčanog popuštanja: dilatacijska kardiomiopatija (N=27), ishemijska kardiomiopatija (N=20), restriktivna kardiomiopatija (N=2), valvularna bolest srca (N=3), aritmogena kardiomiopatija desne klijetke (N=1) i subakutni miokarditis (N=1). Dobivena su slijedeća hemodinamska mjerenja: mPAP 40 ± 13 mmHg, TPG $13,7 \pm 8,5$ mmHg, PVR $3,97 \pm 2,61$ WU, PVRI $7,86 \pm 4,84$ WU $\cdot$ m², CI $1,85 \pm 0,48$ L/min/m². Žene su imale trend višem bazalnom PVR u odnosu na muškarce ($5,53 \pm 3,99$ vs. $3,57 \pm 2,00$ WU, $P=0.03$) i višim bazalnim vrijednostima PVRI ($10,03 \pm 7,33$ vs. $7,30 \pm 3,92$ WU $\cdot$ m², $P=0.06$). Međutim, vazodilatacijski odgovor na PGE1 u testu reverzibilnosti bio je izraženiji u ženskih bolesnika (Δ PAP = $-15,33 \pm 8,85$ vs. $-7,11 \pm 7,71$ mmHg, $P=0.03$; Δ PCWP = $-10,17 \pm 6,42$ vs. $-3,59 \pm 6,32$ mmHg, $P=0.03$; Δ PVR = $-3,07 \pm 2,57$ WU vs. $-1,70 \pm 1,37$, $P=0.07$).

ZAKLJUČAK: U usporedbi s muškarcima, čini se da ženski bolesnici s teškim popuštanjem srca imaju veći plućni vaskularni otpor, a s druge strane pokazuju jači odgovor na vazodilatacijsko testiranje plućne cirkulacije. Nisu poznate spolne razlike u normalnoj plućnoj hemodinamici. Trend višim vrijednostima PVR i PVRI u pacijentica mogu se objasniti manjom BSA, ali je također moguće da postoji izravna spolna predispozicija, kao što je slučaj s idiopatskom plućnom hipertenzijom. Uočene spolne razlike u plućnoj hemodinamici mogu imati utjecaja na poslijetransplantacijsku prognozu što treba potvrditi budućim studijama.

OBJECTIVES: The purpose of this study was to compare hemodynamic characteristics between female and male patients with severe heart failure who are considered for heart transplantation.

PATIENTS AND METHODS: 57 consecutive patients with severe heart failure were referred for heart catheterization as a part of pre-transplant evaluation.

RESULTS: 43 men and 14 women with mean age 56 ± 10 years and etiology of heart failure as follows: dilated cardiomyopathy (N=27), ischemic cardiomyopathy (N=20), restrictive cardiomyopathy (N=2), valvular heart disease (N=3), arrhythmogenic right ventricular cardiomyopathy (N=1) and subacute myocarditis (N=1). Hemodynamic measurements were as following: mPAP (median pulmonary artery pressure) 40 ± 13 mmHg, TPG (transpulmonary pressure gradient) 13.7 ± 8.5 mmHg, PVR (pulmonary vascular resistance) 3.97 ± 2.61 WU (Wood Units), PVRI (pulmonary vascular resistance index) 7.86 ± 4.84 WU $\cdot$ m², CI (cardiac index) 1.85 ± 0.48 L/min/m². Women had a trend to higher basal PVR (5.53 ± 3.99 vs. 3.57 ± 2.00 WU) and PVRI (10.03 ± 7.33 vs. 7.30 ± 3.92 WU $\cdot$ m², $P=0.06$) than the male patients. However, the vasodilation response to PGE1 (prostaglandin E1) in vascular resistance reversibility testing was more pronounced in female patients (Δ PAP {change in pulmonary artery pressure} = -15.33 ± 8.85 vs. -7.11 ± 7.71 mmHg, $P=0.03$; Δ PCWP {change in pulmonary capillary wedge pressure} = -10.17 ± 6.42 vs. -3.59 ± 6.32 mmHg, $P=0.03$; Δ PVR {change in pulmonary vascular resistance} = -3.07 ± 2.57 vs. -1.70 ± 1.37 WU, $P=0.07$).

CONCLUSION: In comparison to males, female patients with severe heart failure seem to have higher pulmonary vascular resistance. However, they exhibit stronger response to pulmonary vasodilator testing. Gender related differences in normal pulmonary hemodynamic are not known. A trend to higher PVR and PVRI in female patients could be explained with their lower BSA (body surface area), but it is also possible that there is a specific gender predisposition as it is the case with idiopathic pulmonary hypertension. The observed gender related difference in pulmonary hemodynamics could have a prognostic implication on the post-transplant prognosis and therefore requires further investigation.

LITERATURE

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