

Persistent Elevation of Vascular Endothelial Growth Factor and Prostacyclin Following Cardiopulmonary Maladaptation to High Altitude: A Pilot Study

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Background: Exposure to hypobaric hypoxemia causes acute mountain sickness (AMS) in 40% of subjects acutely exposed to an altitude of 4,000 m. Vascular endothelial growth factor (VEGF) and cytokines appear to play a role in AMS in model systems. The objective of this pilot study was to explore the change in VEGF, the vasodilatory prostacyclin PGI-2, interleukin-6 and thiobarbituric acid reactive substances (TBARS) levels following prolonged exposure to hypobaric hypoxemia on Bolivian Altiplano. The secondary objective was to investigate the relationship between these markers with good versus poor adaptation to high altitude.

Methods: The study population consisted of 7 climbers aged 24-64 yr. One cardiac transplant and one kidney transplant recipients participated in this study. Aerobic capacity was assessed on a treadmill using a RAMP protocol with gas exchange analyses. Blood samples were harvested within 48 hr of departure and within 24 hr returning to sea level.

Results: Selected biochemistry parameters are presented in the table:

	VEGF (pg/mL)		PGI-2 (pg/mL)		Il-6 (pg/mL)	
	Pre	Post	Pre	Post	Pre	Post
No-AMS* (n=5)	232 ± 54	251 ± 81	48.7 ±39.2	77.6 ±60.9	14.9 ±11.7	14.8 ±14.1
AMS-brain† (n=1)	259	244	85.4	62.0	40.3	51.9
AMS-CP‡ (n=1)	222	553	118	311	11.3	13.7

Data are mean ±SD. CP= cardiopulmonary. Both cardiac and Tx recipients did not experience AMS. Maximum altitude achieved: *6120-6522; †5680; ‡5300 meters.

Conclusions: Pulmonary maladaptation to high altitude results in a 2-fold elevated VEGF and PGI-2 without concomitant increase of markers of inflammation or oxidative stress. VEGF does not appear to increase in cerebral maladaptation to high altitude. Further investigations are needed to better understand the role of VEGF and other biomarkers during the process of adaptation or maladaptation to high altitude.

Sexuality and Chronic Respiratory Disease

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Background: At the admission in rehabilitation program, some patients with chronic respiratory disease were asked by a health professional to answer a questionnaire about their sexuality. The objectives of the study were 1) to determine if sexual problems occurred in patients with respiratory chronic disease ; 2) to assess if these survey problems were linked to respiratory disease; 3) to explore the motivation to speak about sexuality during rehabilitation program.

Methods: 52 consecutive respiratory disease subjects (58.3 ± 9 yr; FEV₁ = 65.5 ± 21 % predicted, mean ± SD) answered a sexuality questionnaire survey with rehabilitation team (psychologists, nurses, physiotherapists). This group comprised 26 men and 26 women.

Results: 70% of patients estimated that respiratory disease had an impact on their sexuality. A visual analog scale showed that 62% of patients were not satisfied. The severity of obstruction (FEV₁) was not correlated to satisfaction (r=.017, P=0.90), or frequency (r=.08, P=0.55). Breathlessness was the most important factor of discomfort in sexual activity (61.5%). Tiredness and cough came second (32% and 21% re-