DEEP SKINDIVE: ENT AND CARDIOLOGICAL SPECIFIC IMPLICATIONS

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Introduction

The impressive evolution of skindive technique is unfortunately followed by concomitant significant rise in the number of diving accidents for those performing underwater fishing at more than 25 meters of water column. The clinical picture always showed is definitely superimposable to those manifestations following a DeCompression Sickness (DCS) occurrence or even an Arterial Gaseous Embolism (EGA) episode.

Aim

To evict which could be the ENT and the cardiological aspect of skindive.

Materials and methods

During 2002÷2007 we studied 150 subjects, amateur and professional skindivers.

We have expecially studied the variations in the hematological concentration of both cardiac peptide assay [ANP, BNP (see tab.1), CNP] and plasmatic catecholamine one (Adrenaline, Noradrenaline, Dopamine).
The subjects enrolled in our study underwent blood exams at pre-dive basal condition and, with a further physical and emotional stress, 5 hours after a rough sea deep skin-dive (underwater fishing at a 38 msw bottom bathymetry) and, also in this case, other blood exams were applied, pre- and post-dive, during some static and dynamic apnea tests that were performed in a pool.

Results

We could observe that both there are some important cardiometabolic parameters changing as it usually happens in congestitial cardiac failure, in myocardial infarction and stroke, and that there is a rising frequency in "new" ENT clinical manifestations, so that a first nosologic and clinical review (expecially as per inner ear pathologies) is highly required to allow a proactive preventive attitude, or a proper treatment at least.

CASE details	BNP Basal measurement Immunoradiometric Manual Analysis (IRMA)	After surfacing value	Difference
1♂	5,67	822,45	816,78
2♂	7,81	814,23	806,42
3♂	6,21	791,66	785,45
4♂	9,32	788,41	779,09
5♂	6,64	743,43	736,79
6♂	7,74	741,65	733,91
7♂	6,98	741,24	734,26
8♂	8,31	739,87	731,56
9♂	6,15	735,55	729,4
10♂	7,25	733,98	726,73
11♂ linear skindive	6,79	13,15	6,36
12♀ linear skindive	4,14	6,55	2,41
13♂ performing the 88m costant weight	3,12	215,88	212,76
ARA dive record	3,74	4,14	0,40
14♀ ARA dive	2,91	3,68	0,77
15♂ ARA dive	3,58	2,52	-1,06
16♀ ARA dive	3,17	2,51	0,66
17♂ Trimix dive	4,22	26,04	20,38
18♂ Trimix dive	5,66	39,21	33,55

Table 1: Pre and post dive BNP findings

Conclusions

Thanks to the overmentioned data analysis we do evict some undoubtely important aspects about underwater physiopathology: these definitely unknown aspects seem to be able to play soon a leading role both in the comprehension of breath-hold dive human adaptive mechanisms and even in perfecting some neurological and cardio-vascular clinical presentations still waiting for a proper reply from the 'official' medicine.

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