

## TREATMENT OF PATIENTS WITH HYPERBARIC OXYGEN IN THE DEPARTMENT OF HYPERBARIC MEDICINE IN MBAL VARNA VMA

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### SUMMARY

Slowly but surely, hyperbaric oxygenation is established as a method of treatment for many diseases. Aim of our work is to present the experience of the Department of hyperbaric medicine at VMA MBAL Varna in the treatment of patients with Hyperbaric Oxygen. The study covers the period 1992-2011. A multiplace hyperbaric chamber at a pressure of 2 to 2.8 ATA 100% oxygen is used. It is analyzed distribution of patients passed through the department by years and nosological units. It is concluded that it has gained solid experience, which is a good basis for further development and expansion of indications for hyperbaric oxygenation.

**Key words:** hyperbaric oxigenation, hyperbaric chamber

### INTRODUCTION

Slowly but surely, hyperbaric medicine is becoming an established treatment modality for a variety of medical disorders although used relatively recently, the fifties of the 20<sup>th</sup> century and primarily in the developed maritime countries. Globally, there is still no uniform indications for use. In the U.S., HBO therapy is used in 12 groups of diseases, this standard was prepared by the Association of hyperbaric and undersea medicine for the U.S. (UHMS). European medical society in the last 15 years actively engaged in identifying the site of hyperbaric medicine in clinical practice, led to a European code of quality practice in hyperbaric oxygenation /May 2004/.

### PURPOSE

Our goal was to present our experience with HBO in various diseases.

### MATERIALS AND METHODS

The study covers the period from 1992 to 2011. Methods applied in the study: analysis of literary sources, documen-

tary method, a comparative analysis. The data were processed by statistical and graphical analysis.

### RESULTS AND DISCUSSION

For a period of 20 years in the Department of Hyperbaric Medicine at VMB 3926 patients have undergone. The trend of number of patients treated with hyperbaric therapy method is generally increasing for the period. There is some decrease in the number of patients for the years 1999 to 2003 and from 2004 to the present moment the number of patients grows. We can make a comment why we believe.

The largest share for patients with otorhinolaryngological diseases 1515 or 38.6%. They are more than one third of a course of hyperbaric oxygenation. The next in number are those with 734 or surgical diseases 18.7%. These two categories of patients are more than half using HBO .

Some specific pathologies are subject to treatment only in hyperbaric chamber and this makes them of special interest. Second time to turn our attention to them is that they always present state of urgency. In this group belong patients with divers diseases and poisoning with carbon monoxide. The number of cases is respectively 151 or 3.8% for diving illnesses and 402 or 10.2% for poisoning.

The largest number of cases to treat divers there in 1996. The number of cases of this type was significantly greater in the first half of the period. From 2002 until the number of diving diseases is definitely decreased. Only once /2007/. It exceeds 10. In the recent years there has been increased awareness of diving risks and how to avoid them. On the

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Table 1

years/nosological units	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	общо
surge-ry	6	33	58	43	43	40	46	37	25	15	21	20	43	37	50	28	51	48	48	42	734
inter-nal disea-ses	1	21	23	21	30	17	53	52	34	17	15	5	14	15	19	9	18	15	3	8	390
traum-atology	1	10	13	11	7	9	21	31	27	15	17	5	7	13	23	19	18	24	12	37	320
neuro-logy	1	20	19	47	56	27	30	29	14	6	8	11	10	17	15	7	13	28	30	26	414
otorhi-nola-ryngo-logy	2	5	10	15	42	37	54	40	43	15	12	9	40	85	135	209	132	166	219	245	1515
diving disea-ses	2	3	6	12	30	6	10	8	23	17	0	1	0	3	3	12	2	6	4	3	151
toxico-logy	4	30	20	30	38	43	46	15	14	12	1	0	6	9	25	31	26	24	13	15	402
total	17	122	149	179	246	179	260	212	180	97	74	51	120	179	270	315	260	311	329	376	3926

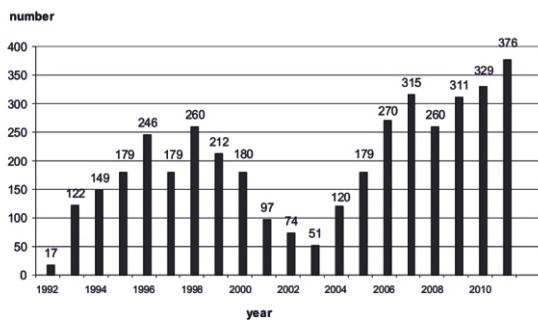


Fig. 1. Passed through the department of hyperbaric medicine patients

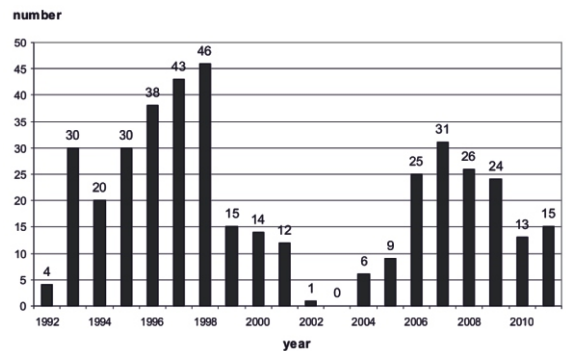


Fig. 3. Intoxications

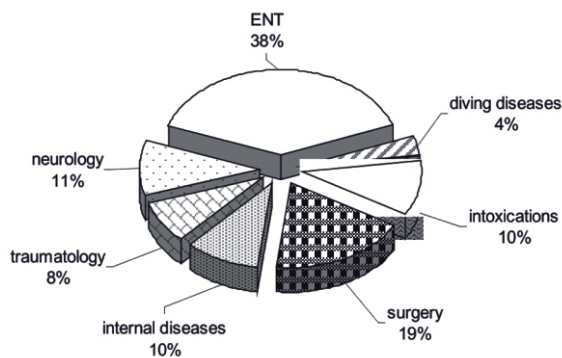


Fig. 2. Patients treated in the department of hyperbaric medicine for the period 1992-2011 distribution by nosological units

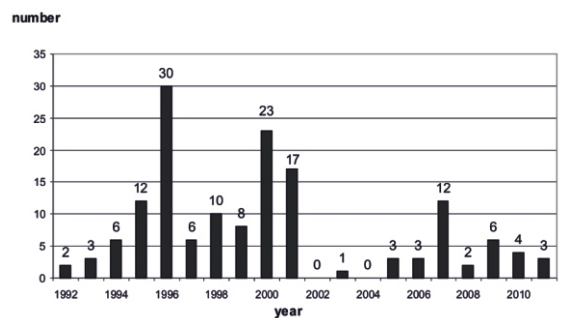


Fig. 4. Diving diseases

other hand a growing number of physicians are interested and qualified in marine and diving medicine. It is not negli-

gible and that the decreased activity of gathering rapanas and related incidents.

The number of patients treated with intoxication is also a significant decrease for 2002-2004 year. Then the cases are

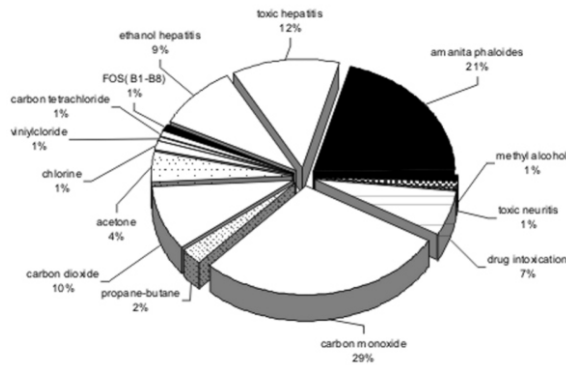


Fig. 5. Distribution of patients with intoxications by the type of toxic agent

increasing, but never reached the values of the first half of the period, but in recent years at levels 1/3 of those years from 1996 to 1998.

Midst of intoxicating agents are: carbon monoxide, butane, carbon dioxide, acetone, chlorine, vinyl chloride, carbon tetrachloride, PHOS (BI-B8); ethyl alcohol, methyl alcohol, amanita faloides; drugs. The most significant proportion of them are carbon monoxide poisoning who are 99 or 28.7% of all intoxications. CO as a toxic agent is found both in industry and households. Source is the incomplete burning in combustion heaters, internal combustion engines, fires and other incidents.

### CONCLUSION

During the twenty years period of its existence the Hyperbaric medicine department has gained a substantial experience with the HBO treatment of a lot of diseases. Our indications for HBO meet those of world leading authors in HBO. This experience is a solid base for further development and expanding indications of hyperbaric oxygenation.

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