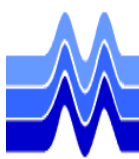


European Journal of Underwater and Hyperbaric Medicine


EUBS

 European Underwater and
Baromedical Society

Official NEWSLETTER

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DISCLAIMER: All opinions expressed are given in good faith and in all cases represent the views of the writer and are not necessarily representative of the policy of the EUBS.

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EDITOR Peter HJ Mueller eubs@hbo-mannheim.de
Speyerer Strasse 91-93, D-68163 Mannheim/Germany

ASSISTANT EDITOR Hyperbaric Medicine and Clinical Applications: Till S. Mutzbauer
ASSISTANT EDITOR Occupational Medicine, Compressed Air Work: Birger Neubauer
ASSISTANT EDITOR Physiology and Medicine of Diving, Fitness to Dive: Kay Tetzlaff

INTERNATIONAL EDITORIAL BOARD

Country	Name	e-mail Address
Australia	John Knight	spumsj@labyrinth.net.au
Austria	Clemens Mader	hbot@gmx.at
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	Peter Germonpré	peter.germonpre@hmra.smd.be
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France	Daniel Mathieu	dmathieu@chru-lille.fr
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	Jürgen Wenzel	juergen.wenzel@dlr.de
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	Yehuda Melamed	hbomed@netvision.net.il
Italy	Michael Michael	ncla@working.it
	Guliano Vezzani	gvezzhyper@polaris.it
Latin-America	Cuauthemoc Sancez	danmex@scubalatin.com.mx
Malta	Ramiro Cali-Corleo	irocali@daneurope.org
Netherlands	Leo Geeraedts	l.geeraedts@anat.kun.nl
	Art van der Kleij	a.j.vanderkleij@amc.uva.nl
Norway	Alf Brubakk	alf.o.brubakk@medisin.ntnu.no
	Jan Risberg	jri@nui.no
Slovenia	Igor Mekjavic	eubs@guest.arnes.si
Spain	Jordi Desola-Ala	cris@comb.es
Sweden	Mikael Gennser	mikgen@nn.apc.org
	Folke Lind	kfol@kir.ks.se
Switzerland	Jörg Schmutz	joerg.schmutz@hin.ch
	Jürg Wendling	mail@wendling.ch
Turkey	Maide Cimsit	cimsit@iname.com
United Kingdom	David Elliott	106101.1722@compuserve.com
	Philip James	p.b.james@dundee.ac.uk
USA	Dick Clarke	dick.clarke@rh.m.edu
	John Feldmeier	jfeldmeier@mco.edu

CORRESPONDING ORGANISATIONS

ECHM European Committee for Hyperbaric Medicine
SPUMS South Pacific Underwater Medicine Society
UHMS Undersea and Hyperbaric Medical Society

MANUSCRIPTS: see INSTRUCTIONS TO AUTHORS on inside of back cover.

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FROM THE EDITOR

Dear Readers!

Meanwhile another issue of the **EJUH** should have been delivered to you, containing the program and abstracts of the **EUBS Annual Scientific Meeting 2000 in Malta**. Although it did not include the usual **Newsletter** part and it was wrongly indexed as “Supplement” it was supposed to form the second issue of **Volume No. 1 of the Journal**.

The reason for this is the **EUBS Budget** (see page 20), which does not enable us to bring out four full issues plus a Supplement for the abstracts of the meeting yet. Hopefully this will change soon and we will be able to start real Supplements for the Program and Abstracts of our Scientific Meetings.

A wonderful development is that we are at the moment forming a **Peer Review Board** for the **EJUH**. **Alf Brubakk**, former **EUBS President** and well known for his scientific vigour, has been brave enough to get in charge of this board and is busy gathering his crew from all fields of Underwater Physiology and Baromedicine. I am very grateful for having this extremely cautious dive buddy (sic!) of mine in such an important position!

Those of you who have attended the last **EUBS Meetings** are already aware of the introduction of the **EUBS** to the Internet, but **Peter Germonpré**, the **EUBS Webmaster**, has pointed out that we almost forgot to announce the successful appearance of the **EUBS** in the **World Wide Web** to our members. It was mentioned only in the **President’s Column**.

Since the **EUBS** website is online it has been constantly improved by **Peter**, and is now fully functional. You can even renew your membership by an online form now, so please check it out! The URL is www.eubs.org and I would like to congratulate **Peter** for his successful efforts on behalf of the society. A real benefit for our **Corporate Members** is derived

from the **EUBS Website**, as they now have their logos linked to their Websites, thus enabling direct access to all the information on the corporation behind. Since the Internet has become a popular source for information this means excellent advertisement for the **Corporate Members of the Society!**

We will continue to publish the **EUBS Newsletter** part of the **Journal** on the **EUBS** website, however, we will not put the full issue on the web in the future, as we would like to gain an increase in membership from the offerings of a scientific journal to our members. The full text version of the first issues was meant to serve as a promotion for the Society’s new journal, but the advantage of a full membership can only be accomplished by saving the scientific merits of the **Journal** for the printed version.

Valerie Flook’s series “**Back to fundamentals**” has received a warm welcome from our readers. I am therefore pleased to be able to expand the series to the second major field of interest to our members, the pathophysiology of conditions suitable for **Hyperbaric Oxygen Therapy**. It will start with the underlying cellular reactions to radiation, and will be continued by showing how **Hyperbaric Oxygen** is believed to restore the normal tissue capacities.

This part of the series is hosted by **Uli Carl**, a radio-oncologist formerly at the University Hospital of Düsseldorf and a long time believer in **HBO-Therapy**, and his co-workers. One of them (**Axel Hartmann**) is the recipient of the **AGA HBO-Award 1999**, presented by the **German Association of Hyperbaric Facilities (VDD)** and **AGA Health Care Germany** for his research. An exciting project seems warranted with this new part of the series!

For now my best wishes for a **Merry Christmas** and a **Happy New Year** to all of you!

Peter

EUBS EXECUTIVE COMMITTEE

PRESIDENT

Dr. Ramiro Cali-Corleo
Hyperbaric Unit, St. Luke's Hospital
G'Mangia, Malta
Tel.: +356-234765 Fax: +356-372484
e-mail: irocali@daneurope.org

VICE PRESIDENT

Dr. Noemi Bitterman
Technion
P.O.Box 8174, Haifa 3308, Israel
Tel.: +972-4-8347171 Fax: +972-4-8346631
e-mail: haimb@tx.technion.ac.il

IMMEDIATE PAST PRESIDENT

Dr. Greta Bolstad
SINTEF UNIMED
N-7034 Trondheim, Norway
Tel.: +47-73596899 Fax: +47-73591005
e-mail: greta.bolstad@unimed.sintef.no

PAST PRESIDENT

Dr. Juergen Wenzel
Walhallstrasse 36, D-51107 Koeln, Germany
Tel.: +49-2203-601 3370 Fax: +49-2203-68323
e-mail: juergen.wenzel@dlr.de

SECRETARY

Dr. Joerg Schmutz
Foundation for Hyperbaric Medicine
Kleinhuningerstrasse 177, CH-4057 Basel, Switzerland
Tel.: +41-61 631306 Fax: +41-61-6313006
e-mail: joerg.schmutz@hin.ch

TREASURER & MEMBERSHIP SECRETARY

Mrs. Angela Randell
Benview, Prospect Terrace
Port Elphinstone, Inverurie AB51 3UN, United Kingdom
Tel. & Fax: +44-1467-620408
e-mail: benview@abel.co.uk

MEMBER AT LARGE 2000

Dr. Martin Hamilton-Farrell
Hyperbaric Unit, Whipps Cross Hospital
Leytonstone, London E11 1NR, United Kingdom
Tel.: +44-181-5356665 Fax: +44-181-5356506
e-mail: mrhf@dircom.co.uk

MEMBER AT LARGE 1999

Dr. Mikael Gennser
FOA Naval Medicine, Nat. Defence Research Establishment
S-13061 Horsfjarden, Sweden
Tel.: +46-8-50263474 Fax: +46-8-50034735
e-mail: mikaelge@sto.foa.se

MEMBER AT LARGE 1998

Dr. Peter Germonpré
Centre for HBO-Therapy, Queen Astrid Military Hospital
Rue Bruyn 200, B-1120 Brussels, Belgium
Tel.: +32-2-264 4868 Fax: +32-2-262 1480
e-mail: peter.germonpre@hmra.smd.be

NEWSLETTER EDITOR

Dr. Peter HJ Mueller
HBO-Zentrum Rhein-Neckar, Diakoniekrankenhaus
Speyerer Str. 91-93, D-68163 Mannheim, Germany
Tel.: +49-621-8102 390 Fax: +49-621-8102 393
e-mail: eubs@hbo-mannheim.de

PRESIDENT'S COLUMN

Dear members of the EUBS!

This is my first address to you as president of our society, the European Underwater and Baromedical Society. I must admit that this year will remain special to me as I not only have the honour of becoming EUBS president but also this year's Secretary General and host to the Annual Scientific Meeting of the Society last September.



First of all I would like to thank the outgoing president Dr Greta Bolstad for her work for the society, it was a privilege to work along side her. I am sure she will continue to participate fully in the affairs of the society as its immediate past president.

I have had the good fortune to observe and learn from a number of previous presidents; Hans Ornhagen, Alessandro Marroni, Jürgen Wenzel and, of course, Greta. All had a different but effective style of leadership and I will strive to live up to their example.

I am also fortunate to have a very valid person, Dr Peter Mueller, as editor of this journal. His first effort was acknowledged by all to be a success. I look forward to collaborating with him in future issues.

While on the subject of the Journal, now more than ever it is important that articles and papers are sent to Peter to be considered for publication. We no longer have a simple newsletter but a journal which must be sustained by regular valid and interesting articles if it is to keep the desired standard or even survive!

Let us hope that the traditionally 'distant' attitude of most of the members of the society is set to change, one good indication of this is the fairly respectable voting response we had for the election of vice president and member at large, I hope this level of participation will be kept up.

The memory of our Annual Scientific Meeting held last September in Malta is slowly fading away. From the letters and messages received by participants after the meeting, it seems to have gone well. This year's meeting also witnessed the birth of a new academic body, the European College of Baromedicine. It will surely fill a gap which has long been bothering those of us working actively in diving and hyperbaric medicine. I am sure you will read with interest the article on that.

Perhaps it is appropriate at this stage to state my intention to further strengthen the collaboration the EUBS has with those other scientific and educational societies and organisations involved in Baromedicine on national and European levels. Our speciality is

small and often sails in troubled waters, we can only progress if we all work in a coherent way towards the same aim, that of developing this field of medicine into one of undisputed credibility and standing in the medical community.

Dear friends, I have been longwinded enough for my first message, I will close with the invitation to all of you to contact me freely should you feel the need to. I look forward to being of service to the EUBS, its members and the baromedical community in general.

Our next meeting is still a long way away but I am certain that its secretary general is already hard at it. Good work Uli!

Ramiro Cali-Corleo

Minutes of the EUBS General Assembly

Malta, 16. September 2000

Following the Agenda, the President, Dr. Greta Bolstad opened the General Assembly.

She informed the meeting that from now on Dr. Arvid Hope from NUI, Bergen, Norway, will be in charge of the library of the EUBS. Order forms have been established to allow an easy order of proceedings. They will be available through the Membership Secretary Angela Randell. The form will also be found on the website and in the Journal.

Students who wish to apply for a travel grant (reimbursement up to 50% of travel expenses) should contact Angela Randell.

The President addresses many thanks to Dr. Peter Müller for his excellent work in the European Journal of Underwater and Hyperbaric Medicine (EJUH). Thanks to his efforts, the Journal has achieved in a short time an excellent quality as well as for its contents as for its presentation. The President invites members to submit papers. Dr. Peter Müller received an applause from the audience.

The President addressed also many thanks to Dr. Peter Germonpré for his achievement for the Society's website: <http://www.eubs.org> and invited the members to visit the website.

Dr. Peter Germonpré showed to the audience the front page of the website. The site is visited by an average of 150 visitors a month with a peak of more than 500 in July. Visitors explore an average of 3,2 pages, look mainly the index page as well as the newsletter. More than 50% are coming from the USA and are direct visitors. The EJUH is published online but with a delay of a couple of weeks in order to allow time to the paper edition to be sent. Application forms are also available online. Corporate Members links are also hit 15 times a month.

The Minutes of the General Assembly of 1999 in Eilat/Haifa were accepted.

The Financial Statement was also accepted. The society presently has 400 members.

Dr. Peter Müller presented the next EUBS Meeting on behalf of its Secretary General, Dr. U. van Laak who could not be present. The meeting will be held in Hamburg (12-17 September 2001). Besides the usual Annual Meeting, there will be several satellite symposiums, all on the responsibility of the local organizer. One will be organized by the German Society for Diving and Hyperbaric Medicine (GTÜM) devoted to Fitness for Diving especially in remote locations, one International Symposium on Physical, Chemical and Biological Hazards in Compressed Air Work, as well as a DAN Satellite Meeting. Infos at vanlaak@gtuem.org or weiss@cpb.de, and birger.neubauer@bags.hamburg.de for the Compressed Air Work Symposium. Hamburg is a big city with excellent international communication by plane, road, train and ship. The Conference Centre at the Hotel Intercontinental is of excellent quality and is of walking distance to the city centre. There will be efforts to make a good social program. The first announcement will be mailed in November.

The 2005 31st EUBS Meeting will be held jointly in Barcelona in September together with the 15th International Congress on Hyperbaric Medicine <http://www.comb.es/cccmh>.

Questions from the floor: Mr. Le Pechon wondered why the name of the journal is European Journal for Underwater and Hyperbaric Medicine and not of Underwater and Baromedicine.

Dr. Greta Bolstad explains that the name of the journal has been debated in the Executive Committee and that the actual title is the one which reached the majority of votes.

Dr. Jordi Desola noted that the Society now having about 400 members coming from different specialties: engineers, physicians, physiologists etc. it would be helpful to have this information in the members register. Dr. Greta Bolstad forwarded this information to the next Secretary General.

Dr. John Polychronidis suggested to the GA that as a thank from the Society for their efforts, the organizing committees of the meetings should have a free registration to the next meeting. Greta Bolstad answers that this would be a financial burden on the shoulder of the next organizer and that it will be up to them to make such a decision.

Presentation of the award for the best poster. The criteria used to make the decision are: the scientific content of the poster, its presentation and relevance of the topic to the field of diving or hyperbaric medicine. The jury was constituted as usually by two members of the Executive Committee and one member of the local organizing committee. The winner was the poster "How does nitrogen at raised pressure produce narcotic pharmacological effect?" by H el ene N. David & Jacques H. Abraini

from the Faculty of Sciences, University Henri Poincaré, Nancy 1, F 54506 Vandoeuvre-les-Nancy.

It was announced that the membership has elected Dr Noemi Bittermann as next Vice-President of the society.

Dr. Sandro Marroni having been in the Executive Committee of the Society during the last twelve years (President elect, President, Immediate Past-President and finally Past-President) and Igor Mekjavic, having served in the Executive Committee of the Society during the last three years as a Member-at-Large are now both leaving the Executive Committee. They were warmly thanked with applause by the entire assembly.

The new President elect will be Dr. Noemi Bittermann from Israel. She won in a very close contest over Dr. Seppo Sippinen from Finland.

The new Member-at-Large is Dr. Martin Hamilton-Farrell from England, and Dr. Mikael Gennser from Sweden who will replace Noemi. The

new members of the Executive Committee were welcomed with applause in their new function. Dr. Sippinen congratulated personally and warmly Dr. Bitterman in front of the floor.

With this words, Dr. Greta Bolstad ended her 3 year term as President of our Society. She gave the word to Dr. Iro Cali Corleo who by this became the new President of the Society for the next three years.

Dr. Cali Corleo started his presidency by thanking Dr. Bolstad for the good care she had taken of our Society. He said that he hopes to be as good a President as his predecessors, Dr. Orhagen, Dr. Marroni, Dr. Wenzel and Dr. Bolstad who each in his or her one style were all effective Presidents and he hoped to put what he learned from them to good use.

With these words he closed the General Assembly 2000.

Minutes reported by

Dr. Jörg Schmutz, Secretary General

EUBS BUDGET FOR 2000

INCOME

Membership	350 x £20	£7,000.00
Corporate Membership	6 x £150	£900.00
Total		<u>£7,900.00</u>

EXPENDITURE

Secretarial Fees		£600.00
VISA/Credit Facilities		£300.00
Phone/Postage/Printing etc		£350.00
Travel and Accommodation – Malta		£600.00
Newsletter	already spent this year	1055.39
	Includes winter 99	<u>2085.20</u>
		£3,140.59
Website	\$40 per month - \$480	£350.00
Sponsorship of Students to meetings		£2,000.00
Zetterström Prize - Dr. C M Muth - registration - \$300		£220.00
Total		<u>£7,560.59</u>

Current Membership Status

Full Members	375
Emeritus and Honorary Members	15
Corporate Members	5

Financial Statement as at 8 September 2000

£12,305.06

DR. MAX HAHN DIES IN DIVING ACCIDENT

R.W. Bill Hamilton & Peter HJ Mueller

Dr. Max Hahn, a long time active member of the EUBS, died on 11th June 2000, at the age of 71. Max was diving in a German Lake, the Biggensee, using a Buddy Inspiration rebreather. Max was an expert on rebreathers and had a high regard for the Inspiration. The cause of his death is not known, and the official report on the accident may be some time in coming. It is felt that he had a



buoyancy problem; he apparently surfaced and asked for help, but then sank back into the water. One opinion is that the tank which could have provided gas for buoyancy was depleted. One thing for sure, Max would want the facts, when they become known, to be disseminated to others in hopes of saving others from the same fate.

For almost half a century, his whole adult life, Max was an active diver. He had been diving since the early 1950s, at a time when people had to fabricate some or all of their own equipment. In his life he performed more than 5000 logged dives, in areas as diverse as the North Atlantic or Truk Lagoon, as well as in local inland waters. When he went to a meeting at a place with diving available, he made it a point to go diving.

In real life Max was a physicist and mathematician, and through that he became an expert electron-microscopist. He turned his physics and mathematical skills toward diving, both in equipment design and testing, but also in the more biological aspects including decompression. He served on standards

committees overseeing recreational diving equipment. He was an internationally renowned decompression expert. With his decompression tables DEKO '92 later upgraded to DEKO 2000, he made a invaluable contribution to diving safety

and to an international standard directed at minimizing the decompression risks in recreational diving. Several dive computer manufacturers used his decompression models in commercially available dive computers, and he served them as a scientific consultant. He was a frequent participant in EUBS, UHMS and GTÜM symposiums and workshops, especially those having to do with decompression.

A large part of Max's diving avocation was dedicated to the German Sport Divers Federation (VDST), where in addition to research and development in decompression, his main efforts concentrated on training divers to dive more safely. He was the highest level of instructor in virtually all branches of recreational diving, and an examiner. He took being an instructor very seriously, and was revered by his students. With the advent of commercially available closed circuit rebreathers, Max returned to a technology that he had used at the beginning of his diving career. He focused on the further improvement of this technology. He served as president of the Rebreather Advisory Board RAB. He had made several hundred dives on the Buddy Inspiration.

In Dr. Max Hahn the scientific societies and the recreational diving community have lost an outstanding diving physicist, a true pioneer of sport diving and an enthusiastic technical diving expert with international reputation. We all mourn for the loss of a friend and dive buddy!

Photograph courtesy of Archiv Sporttaucher

ORIGINAL PAPERS

Disapproval of HBO by German Health Care System

Willi Welslau & Uli Van Laak

Deutsche Gesellschaft für Tauch- und Überdruckmedizin (GTÜM) e.V.

German health care system

Most German citizen are insured by a social health insurance. All diagnostic and therapeutic methods, which are covered by this health insurance, are listed in a catalogue of approved methods. Catalogues exist for diagnostic and therapeutic methods for outpatients as well as for medications. For hospitals stays the companies pay fixed rates per hospital day. Until recently, it was possible for health insurance companies to reimburse diagnostic and therapeutic methods outside the catalogues if this was agreed on an individual case by case decision. Due to a new regulation in Germany health insurance companies do not have this possibility any longer. Reimbursement is restricted to catalogue listed methods exclusively.

Approval of new methods

Whether or not any new method will be included in the catalogue is decided by a committee made up of the social insurance companies and representatives of their contracted physicians. The procurement for application of new methods is based at the social insurance companies and the boards of their contracted physicians only. Scientific Medical Societies and other organisations do not have the right for application. The so called "federal committee of physicians and insurance companies" draws information required for their decisions out of the literature, from medical databases, out of the internet and from scientific medical societies as well as from individual specialists. The decisions taken by the committee have to be approved by the Ministry of Health thereafter. Accepted methods are then integrated in the catalogue of approved methods and will be published likewise new governmental regulations or laws.

Federal committee of physicians and insurance companies

The "federal committee of physicians and insurance companies" is formed in parity by representatives of social insurance companies and representatives of the contracted physicians. Nine members are representatives of the insurance companies, nine are representatives of contracted physicians, and three members of the committee are independent. The main effort in preparation of the decisions of the committee is performed by a group of so called "working committees". One of these sub-committees is dealing with diagnostics and therapy for outpatients. The working committees are seated by nine representatives of contracted physicians, nine representatives of insurance companies, and three independent members as well. The working committee for diagnostics and therapy for outpatients is assessing new methods following the guidelines of evidence based medicine.

Assessment by the committee

Three points have to be fulfilled sufficiently by a new method to be integrated in the catalogue of approved methods:

- a) The "effect" of the method (At least one trial of evidence level I has to be presented. If not available, the assessment follows the "best evidence" available),
- b) The "need" for the method (Are there other already approved methods with at least equal effect? Does the new method give us any medical advantage?),
- c) The "economy" aspects compared to the existing methods already integrated in the catalogue of approved methods.

The classification of trials in the assessment of the committee is:

- I randomised prospective trial performed following GCP standards (good clinical practice) and published according to CONSORT statement (consolidated standard of reporting trials)
- II a other prospective interventional trials
- II b good planned cohort trials or case control trials, preferably of more than one trial-group
- II c trials with historical or geographical controls with or without intervention
- III Statement of accepted authority due to clinical experience or report of a committee of experts

The question may arise why HBO should be included in the catalogue for outpatients and not

for hospitalised patients. Currently only seven chambers (six multiplace) in Germany are owned by hospitals. Thirty more chambers (all multiplace) are located on hospital grounds (but not hospital owned) or located close by, engaged in treatment of outpatients and hospital patients as well. Thirty-two more multiplace chambers are not located at hospitals and can treat only outpatients. Social insurance companies pay fix rates per hospital day irrespective of the treatment given in the hospital, whether HBO treatment is given or not. For outpatients every single item listed in the catalogue is covered and paid by the insurance companies separately.

What has to be fulfilled to propose a HBO indication for integration in the catalogue from the sight of HBO physicians (and/or)?

- There must be trials of good evidence level supporting HBO available
- Alternative treatments must be less proven than HBO
- There must be no trials of good evidence level disapproving HBO
- HBO is without alternative
- HBO is the method of choice for treatment in life threatening diseases

Proposed HBO indications

Following these aspects twelve indications have been worked out and proposed for integration in the catalogue:

- Decompression sickness & Arterial gas embolism (both conditions could be life threatening, there is no alternative treatment, existing trials are evidence level II c)
- Gas gangrene infection (life threatening condition, effect of HBO is common medical knowledge, there are several trials of evidence level II c)
- Crush injury (there is one evidence level I trial of Bouachour et al.)
- Diabetic foot syndrome (there is one evidence level I trial of Faglia et al.)
- Prevention of radio necrosis in tooth extraction (there is one evidence level II a trial of Marx et al. [1985])
- Osteointegrated implants in irradiated bone (there is no alternative to normalise bone strength of irradiated bone, HBO has a clear rationale (there are several trials of evidence level II c [Granström])

- Radiation cystitis (HBO is the only therapy with a causal rationale, Bevers et al. published the trial with best evidence level II b)
- Neuroblastoma stage IV (life threatening disease, Vouite et al. & van der Kleij et al. published evidence level II c trial)
- Sudden deafness & acoustic trauma (there are several trials of evidence level II b, the alternative infusion treatment is included in the catalogue of approved methods even though there is not one trial with good evidence level)
- Otitis externa necroticans [maligna] (life threatening but relatively rare disease, there are a few small trials of evidence level II c and III)

The twelve HBO indications have been objectively based and peer-reviewed comprehensively by and in co-operation of a group of German medical Societies:

German Society for Diving and Hyperbaric Medicine (GTUM)

German Society for ENT, head and neck surgery

German Society for Anaesthesia and Intensive Care Medicine (DGAI)

Association of German Anaesthesiologists (BDA)

Association of German Hyperbaric Centres (VDD)

Decision of the committee

After an approximately two years period following the application of the twelve indications the "federal committee of physicians and insurance companies" has rejected all twelve indications of HBO therapy on April 10, 2000. This decision was confirmed by the Ministry of Health on July 12, 2000.

A group of 26 other indications has been disapproved by the federal committee and the ministry of health as well on occasion, even though these indications have been not included in the proposals of the scientific societies before: multiple sclerosis, burn wounds, migraine, vascular headache, radiation proctitis, cystoid macula edema, neuropathy of nervus opticus, occlusion of arteria centralis retinae, CO poisoning, glaucoma simplex, lyme borreliosis, myocardial infarction, Crohn's disease, carcinoma of cervix uteri, head and neck tumours, arterial and venous ulcera, dermal transplants, femoral head necrosis of children (morbus perthes),

idiopathic femoral head necrosis of adults, post irradiation damage of the mamma (edema), osteomyelitis of the jaw and at other locations, cerebral insult, cerebral and spinal trauma, brain abscess, anemia, necrotizing soft tissue infections.

Argumentation of the committee

The rejection of HBO indications is founded by the federal committee for every single indication. The key sentences in the argumentation of the three main questions "effect", "need" and "economy" are cited below:

Decompression sickness and arterial gas embolism

EFFECT: „It's not clear, whether HBO really has an additional effect compared to intensive care alone.“ „There are only retrospective case collections proposing the effect of HBO after demission from intensive care unit.“ „There is no undoubted proof for the effect of HBO“

NEED: „Treatment on intensive care unit with a multidisciplinary approach including neurologic experts is primary to the importance to HBO.“ „There is no need for HBO after demission from intensive care.“

ECONOMY: „Without adequate proof for the need of HBO the economy of this treatment cannot be argued.“

[Comment: Even though diseases are potentially life threatening or connected with the risk of life long disabilities and even though alternative treatments do not exist the committee physicians and insurance companies demands controlled trials.]

Gas gangrene infection

EFFECT: „There are only retrospective case collections with historic controls proposing the effect of HBO compared to treatment with surgery, antibiotics and intensive care alone.“ „There are no controlled trials.“ „There is no undoubted proof for the effect of HBO.“ „Different HBO regimes are used, showing that there is no effective treatment standard proved by trials.“

NEED: „There is no commonly accepted standard of treatment.“ „There are famous surgical working groups (e.g. at the University of Zürich, Switzerland, Prof. Trenz) who don't use HBO because of the not proven effectiveness.“

ECONOMY: „Without adequate proof for the need of HBO the economy of this treatment cannot be argued.“

[Comment: Even though this disease is life threatening and patients are at least prone to long

life disabilities the committee of physicians and insurance companies demands controlled trials. Its remarkable that there are no such trials for any other treatment method used in this illness available.]

Crush injury

EFFECT: „There is one prospective trial (Bouachour et al.), but with substantial deficits.“ „Therefore it is no proof for the effect of HBO.“ „Standard treatment is early debridement, any delay of this measure due to HBO cannot be argued.“

NEED: „There is no proof for the effect of HBO, therefore there is no need for HBO.“

ECONOMY: „Without adequate proof for the need of HBO the economy of this treatment can't be argued.“

[Comment: The trial presented by Bouachour et al. is assessed by the committee as evidence level I, even though further trials are demanded.]

Diabetic foot syndrome

EFFECT: „All presented trials have substantial deficits, only one trial can be evaluated at all.“ „This trial (Faglia et al.) is assessed as evidence level III („formally class II c“).“ „According to presented data the effect of standard therapy is not enhanced by HBO.“ „Besides this different HBO treatment regimes are used, showing that there is no treatment standard.“

NEED: „The effectiveness of conservative and surgical standard treatment is proven, the additional effect of HBO is not proven, therefore there is no need for this expensive treatment, which is not without side effects.“

ECONOMY: „Without adequate proof for the need of HBO the economy of this treatment can't be argued.“

[Comment: Health technology assessment (HTA) report no. 8 of the "Alberta Heritage Foundation for Medical Research" assessed the trial of Faglia et al. as evidence level I "large randomised trial with clear cut results (and low risk of error)", the strength of the results were assessed as "good".]

Sudden deafness and acoustic trauma

EFFECT: „There are formally randomized controlled trials, but not one single trial fulfills quality standards for planning, realization and evaluation.“ „There is no proof for the effect of HBO.“ „Potential risks of HBO are not excluded.“

NEED: „Treatment methods are available within the catalogue of approved methods,“ „further treatment methods are to be investigated for

chronic cases.“ „There is no need for HBO because the is no proven effect for HBO.“

ECONOMY: „Without adequate proof for the need of HBO the economy of this treatment cannot be argued.“

[Comment: There are no trials supporting the effectiveness of the diverse infusion treatments already integrated in the catalogue of approved methods, on the other hand there are several HBO trials with evidence level II b.]

Otitis externa necroticans (maligna)

EFFECT: "The illness is rare, only case reports exist", "There is no trial proving the effectiveness of additive HBO."

NEED: "Standard therapy consists of antibiotics and surgery, there is no need for HBO because there is no proven effect of this expensive treatment, which is not without side effects."

ECONOMY: "Without adequate proof for the need of HBO the economy of this treatment can not be argued."

[Comment: There are no trials for any other treatment methods of this rare sickness available.]

Osteointegrated implants in irradiation bone

EFFECT: „There are no prospective controlled trials based on today's therapeutical standards and with reasonable follow up.“ „The presented trials don't prove undoubtedly the effect of HBO.“

NEED: „the treatment with osteointegrated implants is effective,“ „the additional effect of HBO is not proven,“ „therefore there is no need for this expensive treatment, which is not without side effects.“

ECONOMY: „Without adequate proof for the need of HBO the economy of this treatment can't be argued.“

Prevention of osteoradionecrosis after irradiation

EFFECT: „the presented randomized controlled trial (Marx et al. 1985, assessed as level II a) has got substantial deficits in methodology and medical content.“ „There are no scientifically perfect trials with reasonable follow up.“ „The presented trials do not prove undoubtedly the effect of HBO.“

NEED: "HBO is being discussed controversially, HBO is not part of commonly accepted medical knowledge", "Looking at the successes without HBO and without having proofs for the effect of additional HBO there is no need for this expensive treatment, which is not without side effects."

ECONOMY: "Without adequate proof for the need of HBO the economy of this treatment can not be argued."

[Comment: The trial of Marx et al. [1985] is assessed as evidence level II a, even though the committee demands further controlled trials.]

Radiation cystitis

EFFECT: "Presented were only case reports without adequate planning", "There were no trials with the necessary details and with sufficient follow up." "Randomised controlled trials are needed, if HBO should be used in earlier stages of the disease." "There is still the possibility that HBO induces growing of tumours."

NEED: "The disease has got a low incidence." "Because the effect of HBO is not proven, this method could be used at best as a palliative method in specialized centres."

ECONOMY: "Without adequate proof for the need of HBO the economy of this treatment can not be argued."

Neuroblastoma stage IV

EFFECT: "The presented trial is a phase II trial. The authors only searched for possible effects. They didn't want to prove an effect." "Also MIBG is not a standard therapy but an experimental method."

NEED: "The need of HBO is not proven." "A phase III trial is requested."

ECONOMY: "Without adequate proof for the need of HBO the economy of this treatment can not be argued."

Full text download

The original argumentation of the "federal committee of physicians and insurance companies" against all discussed indications for HBO therapy can be downloaded from the internet (550 pages, german language). Look at "www.kbv.de", scroll down to "HTA reporte" and double click on "Hyperbare Sauerstofftherapie (HBO)".

Reactions

After an exhausting period of arguing in medical terms in every possible way before the decision of the committee took place, now legal action is taken against the legitimacy of the decision of the committee.

Contact:

Dr. med. Wilhelm Welslau,
Scharnitzer Weg 9
D-86163 Augsburg/Germany
w.welslau@t-online.de

Subcutaneous Calcification after Radiation Therapy

U.M.Carl*["], M. Sarbia[°]
& K.A. Hartmann["]

* Clinic for Radiation Oncology, Diakonie
Rotenburg/Wümme

" Clinic for Radiation Oncology, University
Düsseldorf

° Institute for Pathology, University Düsseldorf

Key words: Normal tissue reaction, radiation sequelae, subcutaneous calcification

Abstract

Many authors have dealt with certain aspect of radiation injuries. Mainly fibrosis and vessel depletion are the investigated endpoints. Discussion about the pathogenesis of consequential late radiation damage have not yet lead to a commonly accepted result. Data about ongoing processes are rare. From the pathological point of view vessel depletion in fibrotic tissue is leading to tissue hypoxia. Subcutaneous calcifications are a result of chronic hypoxia ending in a necrosis of surrounding tissues. Such tissues are vulnerable to superficial infections. The time interval between the actual radiation treatment and the final damage can not be predicted. It may range between short and 30 or more years after treatment. In the presented 10 patients total dose as well as size of the treated area are important risk factors. It is important to understand the ongoing processes because the neo-angiogenetic effect of hyperbaric oxygen therapy (HBO₂T) might prevent from reaching the final endpoint (calcification/ulceration) when applied at the time point vessel depletion becomes functionally important.

Europ J Underwater Hyperbaric Med Vol. 1 No 3 (2000): 26-29

Introduction

Late radiation damage may occur even 30 years and more after irradiation (Arndt 1985 and Herrmann 1999). The pathophysiological basis seems to be laid during or shortly after the radiation treatment (RT). Two basic mechanisms

have mainly been described (Trott 1998). Organs and tissues are defined to consist of cooperative cell groups of different specialisation. Direct damage is accompanied by an inflammatory reaction. Changes in the microvasculatur add to the direct cell damage some undefined time after (RT). This leads to the observation, that RT side effects may develop progressively to an endpoint, which cannot be defined at the time of diagnosis (Hartmann et al. 1996).

The clinic of Radiation Therapy at the University Duesseldorf has gained some experiences in treating RT side effects throughout the past 6 years. Patients were recruited from many different hospitals in Germany, France and The Netherlands. It is well established that fibrosis and necrosis may be possible endpoints (Pavy et al. 1995) but in some severe cases subcutaneous calcification were identified as further endpoints within the former irradiation portals after very long follow-up periods.

Material and Methods

From 1997 to 1999 more then 200 patients with late radiation sequelae referred to the clinic of Radiation Therapy at the University Duesseldorf. In this patient cohort we could identify 9 patients with subcutaneous calcifications (Table 1). 4 females were irradiated for gynaecological cancers (n=2) and breast cancer (n=2) 11 to 22 years after curative cancer treatment consisting of operation and radiation therapy (RT). The 5 of the remaining 6 male patients were seen 20-31 years after radiation treatment. Three of the patients were cured from their seminoma. One was irradiated for a papilloma of the bladder. In one case irradiation was performed for a soft tissue sarcoma of the limb. It was possible to reconstruct information about the actual radiation treatment for all patients. All patients have in common, that relatively large doses (50-90Gy, median 80Gy) were given. When patients were admitted, they all had CT-scans of the inflicted region done. One additional male patient showed relatively early alterations already one year after RT. The latter was taken into consideration because the alteration seen might be of interest for interpreting the data.

Results

Nine patients taken up into the presented study have been alive 11 to 31 years (median 19

years) after their tumour-irradiation, which means that they have been efficiently locally controlled. All patients showed subcutaneous calcifications, basically linked with cutaneous ulcerations. As an example, one female patient received pelvic irradiation in 1971 over 4 portals.



Figure 1a: Appearance of the ventral portals



Figure 1b: Appearance of the dorsal portals

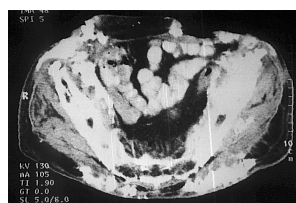


Figure 1c: CT scan of pelvis (Patient #2) in good agreement with clinical findings. Left ventral an ulceration is seen, after the calcification has discharged spontaneously. Left & right dorsal small ulcerations allow to recognize the subcutaneous calcification.

That lady was admitted 22 years after cancer treatment because of urological symptoms. Clinical findings (Fig. 1a/b) showed a good correlation with corresponding CT-scans (Fig. 1c).



Figure 2a: In the upper gluteal area a marked fibrosis is clinically visible.



Figure 2b: Pelvic CT scan of the patient shows correlated subcutaneous fibrosis in dorsal fat tissue. Left lateral an increased density is seen. This may be at risk for later calcification.

The above additional patient showed a subcutaneous fibrosis already one year after RT. In that patient reconstruction of beam and portals provide that the maximum dose in the subcutaneous tissues was responsible for early scanned fibrosis (Figure 2a/2b).

Patient-N°	Diagnosis	Age at diagnosis (years)	Target Volume	Radiation Dose (Gy)	Interval (years)	Damage type
1	Seminoma	30	Pelvis inguinal aortal lymph nodes	60 (split, SAD) 70 (split, SSD) 60	26	lumbal plexopathia, edema, fibrosis, calcification
2	Cervical Cancer	38	Pelvis	80 (SAD) 35 LDR (²²⁴ Ra)	22	enteritis, ulceration, calcification
3	Bladder tumour	42	Pelvis	90 (SSD)	31	ulceration, calcification
4	Breast cancer	32	Breast axillary clavicle sternum	all portals 40 SAD (¹³⁷ Cs)	19	bronchoalveolar fistula bone necrosis, calcification
5	Breast cancer	49	Breast	77 (split, SAD)	2 11	rib necrosis, ulceration, calcification, necrosis
6	Sarcoma	37	lower limb	16 (neutrons) equiv. 80 photons	19	fibrosis, ulceration, calcification
7	Seminoma	33	pelvis aortal lymph nodes	60 (split, SAD) 70 (split, SSD)	10 20	leg, scrotal, penis edema ulceration, calcification
8	Seminoma	35	Pelvis inguinal aortal lymph nodes	60 (split, SAD) 70 (split, SSD) 60	14 28	lumbal plexopathia ulceration, calcification
9	Endometrium carcinoma	62	Pelvis	90 (split, SSD) malpractice	2 11	colitis bone fractures, edema, ulceration, calcification
10	Bone metastases	65	sacrum	50 SAD overlap	1	erythema, fibrosis, pain, plexopathia

Table 1: Patients characteristics are given in the table. All but patient 10 have developed a calcification. Basically high treatment doses were taken responsible. In one patient (#4) the subcutaneous calcification was due to a very large volume rather than dose.

Discussion

It is well established that necrotic or degenerative tissues may show heterotopic calcifications. Basically local ischemia with consecutive tissue damage are accompanied by chronic inflammation. Those processes are taken responsible for the observed phenomenon and thus heterotopic calcification can be seen in many different diseases (Seifert 1997). As to radiation induced calcification only sparse reports are available in the literature (Froehner et al. 1999), thus LENT SOMA Tables (Pavy et al. 1995) do not take up the aspect of calcifications. Obviously patients have to be cured from their tumours and to survive long enough in order to present with the described late normal tissue reaction.

Since long it is commonly accepted, that severity of early radiation sequelae reactions is no predictor for late tissue reactions (Arcangeli et al. 1974). The intensity of late normal tissue damage is described as a function of total dose, fraction size overall treatment time, size of the area of the skin and irradiated volume (Spanos et al. 1980).

The previous statement meets with the presented patient characteristics. Basically a high total dose of 70 and more Gy was seen in patients presenting calcifications. One patient was treated with 40 Gy only, but the size of the field comprised the whole breast and all lymph nodes of the area (sternum, clavicle, axillary; table 1). This provides the explanation that many factors may be responsible for heterotopic calcification after radiation therapy.

Scientific interest was paid to the basis of late reactions. RT induced changes have been found to be very complex (Marx and Johnson 1988). Mainly radiation induced fibrosis (Rodemann and Bamberg 1995) and vascular changes (Okunieff et al. 1998, Doll et al. 1999) have been investigated. Moreover Trott (1998) describes the disturbed integrity of all cell types in a tissue to be responsible for the reaction. Looking at the presented cases it can be seen an initial fibrosis (Figure 2a/b) relatively early (12 months) after radiation therapy. The findings of Arndt (1985) meet with those data. Chronic fibrotic and additive vascular changes may end in a non-bacterial inflammatory tissue with chronic ischaemia.

It has been stated, that the described processes develop progressively up to an endpoint unknown at the time point of diagnosis (Hartmann et al. 1996). From the described clinical reactions (Figure 1a/b, Figure 2a) it seems in conjunction with findings of Arndt (1985) possible, that fibrosis can be seen in many cases. Ischaemia due to vessel depletion may appear very long after RT (Hartmann et al. 1996). Obviously compromised tissues can compensate the damage for a long time, until a breakdown of the vessel-structure leads to an irreversible damage (Ang et al. 1993). Future studies should put more emphasis upon patterns of reaction (Trott 1998).

From what is known about late RT side effects, hyperbaric oxygen therapy (HBO₂T) might offer an appropriate therapy. It is aimed to apply the therapy before necrosis and consecutive fibrosis govern the prognosis. The literature provides evidence, that density and function of blood vessels is the most important mechanism. Marx et al. (1990) have shown in rodents that the application of HBO₂T has a positive impact on the density of blood vessels of irradiated normal tissues. Studies are in preparation in order to investigate the first step, whether the described patterns of late reactions can be influenced by the use of HBO₂T.

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Corresponding author:

Ulrich M. Carl, M.D., Ph.D.
 Clinic for Radiation Oncology
 Diakoniekrankenhaus Rotenburg/Wuemme
 Elise-Averdieck-Strasse 17
 D-27342 Rotenburg/Wuemme
 e-mail: UMCARL@diako-online.de

MEETING REPORT

3rd Workshop of the European Committee for Hyperbaric Medicine (ECHM):

“New indications for Hyperbaric Oxygen Therapy”

Malta, Thursday 14th September 2000

Daniel Mathieu

Following the agreement between EUBS and ECHM, the annual EUBS scientific meeting has been held in Malta, the 14-17th of September 2000 jointly with an ECHM workshop devoted to the new indications for Hyperbaric Oxygen therapy.

The aim of this workshop was to review the actual evidences supporting the use of HBO₂ in diseases not on the ECHM list of accepted indications in order to prepare the update of that list by a next Consensus Conference. The selected potential indications were Cerebral abscess, Pleuro-pulmonary anaerobic infection, Post-sternotomy mediastinitis, Neuroblastoma, Post-radiation enteritis, Cerebral palsy, Stoke, Crohn's disease, Sickle cell disease. Each topic has been presented by an expert in a 30 minutes presentation followed by a 15 minutes general discussion.

After the workshop, the ECHM Executive Board met and decided to classify the new proposed indications for hyperbaric oxygen therapy in 3 categories:

Category I: Condition ready for consideration at a next Consensus Conference on the basis of randomised controlled studies or sufficient alternative evidence [in case RCT non feasible or not ethical, forms of alternative evidence include concordant basic and animal studies, and pertinent clinical reports].

Category II: Condition of interest for evaluation at a future Consensus Conference upon further or new evidence being made available.

Category III: Condition not ready for consideration at a Consensus Conference.

Based on the evidence presented during the workshop, the ECHM Executive Board decided to classify these conditions:

- **Category I:**

- Based on RCT: none
- Based on sufficient alternative evidence, RCT having been considered as non feasible:
 - Anaerobic infectious of specific organs: intracranial infections, pleuropulmonary infections
 - Perineal involvement by complicated Crohn's disease with non healing wound
 - Stage IV Neuroblastoma

- **Category II:**

- Post sternotomy mediastinitis (RCT required)
- Post radiation enteritis (RCT required)
- Stroke (RCT required)
- Sickle cell disease (RCT required)
- Retinitis pigmentosa (RCT required)

- **Category III:**

- Cerebral palsy
- Ileocolic Crohn's disease without perineal involvement

ECHM hopes this workshop will help to direct clinical research on topics on the edge to be accepted (category II).

Contact

Dr. Daniel Mathieu, ECHM Chairman
Service d'urgences respiratoires, de Réanimation
médicale et de médecine Hyperbare
Hôpital Calmette, CHRU de Lille
F-59037 Lille cedex
e-mail: dmathieu@chru-lille.fr

ANNOUNCEMENT

Launch of the European College of Baromedicine

Ramiro Cali-Corleo

The Annual Scientific Meeting of the EUBS in Malta this year was the venue for the launch of the European College of Baromedicine.

The concept of setting up an international academic institution with the aim of sustaining and improving the academic and professional qualifications of all those working in the field of underwater, aerospace and hyperbaric medicine is not new to many of the members of the EUBS.

In fact, it is a natural progression from the valid work being carried out by the ECHM and

EDTC in creating standards that all should follow in order to satisfy the requirements of modern medical science. This will also enhance the credibility of the baromedical field in both national and international medical and political spheres.

In 1999, during the previous EUBS annual meeting in Israel, a steering committee was set up with the task of putting together the necessary instruments and structures, such as statutes, registrations and working committees, with the ambitious target of setting up and launching the College in the following year.

The College Steering Committee, under the Chairmanship of Professor Francis Wattel, succeeded in its task and during its first formal meeting the statute and other statutory instruments were approved and the first College Council elected.

The officers and members of the first Council are:

President:	Prof. Francis Wattel
Secretary General:	Prof. Sandro Marroni
Secretary Academic Affairs:	Prof. Daniel Mathieu
Registrar:	Dr. Ramiro Cali-Corleo
Members:	
	Dr. Costantino Balestra.
	Dr. Dirk Bakker
	Prof. Peter Bennett
	Prof. Alf Brubakk
	Prof. Giancarlo Cianfrone
	Dr. Jordi Desola
	Prof. David Elliott
	Prof. Tomislav Jovanovic
	Prof. Igor Mekjavic
	Dr. Yehuda Melamed
	Dr. Joerg Schmutz
	Dr. Juerg Wendling

The first General Meeting was held at the beginning of the afternoon session on Saturday 16th September where Prof. Wattel addressed the attendees present and Dr Cali-Corleo gave a presentation on the structure, functions and aims of the College. At the end of the presentation, the attendees were invited to declare their interest to form part of the college by completing a form.

The presentation was very well received and over 80 individuals completed and handed in a declaration of interest form. These will be receiving more information from the College as well as a request for details of their professional status.

The College is intended to function primarily as a certifying and registration body working with already established and supporting new academic and training institutions with the primary and principal object of encouraging,

fostering and maintaining the highest possible standards in the teaching and practice of pressure related medicine as advocated by the European Committee for Hyperbaric Medicine.

The College will be working towards sustaining and improving the academic and professional qualifications of its members and for that purpose will be organising and supporting courses, examinations and continued medical education seminars and in general take, or join with others in taking, any steps consistent with these activities such as the granting of diplomas or other certificates of proficiency or standards as an academic institution in its own right or jointly with universities and other academic bodies.

The College does not aim to replace or compete with national universities and training institutions but plans to work with them. This work will be especially important in those countries that are unable to sustain a regular academic program in Baromedicine due to the

small numbers of applicants at any one time as well as the difficulties in putting together a faculty of experts to train them.

Another of its main aims is to safeguard, protect and promote the professional interests of its members. It will ensure that the speciality is coherent with present and future National and European regulations especially with regard to the practice of the speciality. One of these requirements is the creation of a specialist register in Baromedicine.

It will also conduct, direct, encourage, support or provide for research in matters relating to Baromedicine and encourage publication

Any person wishing to learn more about the College is invited to contact Prof. Marroni or Dr Cali-Corleo at the DAN Europe Foundation address: Enfin, Marmora Str, St Julians SGN 10 MALTA or e-mail at irocali@daneurope.org

THE ZETTERSTRÖM AWARD WINNER 2000

This award is made to the best poster presentation at the Annual Meeting of the EUBS. The award was judged by two members of the Executive Committee together with a representative of the Organising Committee of the EUBS 2000 Meeting in Malta.

HOW DOES NITROGEN AT RAISED PRESSURE PRODUCE NARCOTIC PHARMACOLOGICAL EFFECTS

HELENE N DAVID & JAQUES H ABRAINI

Laboratoire de Neurochimie Fonctionnelle et de Neuropharmacologie,
Université Henri Poincaré, Nancy I. Faculté des Sciences, BP 239.
F-54 506 Vandoeuvre-lès-Nancy. FRANCE.

The work that was presented in the poster was already submitted for publication to another journal before the EUBS Annual Scientific Meeting 2000 in Malta. As the authors haven't got any answer at the moment we have to wait with the publication of the paper in the European Journal of Underwater and Hyperbaric Medicine.

If the paper is accepted by the other journal, EJUHM will try to obtain the permission from the Editor of the primary publication to reprint the original article.

In the meantime we have a nice picture from the presentation of the Award to the authors H. David (left) and J. Abraini (centre) by Dr. Ramiro Cali-Corleo (right) at the closing ceremony of the Malta meeting on Sunday, September 17th, 2000.



Photograph courtesy of Maria Schultz

The Editor

EUBS Proceedings Order Form

The **Proceedings** of previous **EUBS Annual Meetings** are now kept by **NUI AS in Bergen, Norway**. A limited stock of original **Proceedings** is available, however, it is planned to keep at least one original copy at this **Library** and make further photocopies if needed.

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The **EJUHM** welcomes contributions (including letters to the Editor) on all aspects of diving and of hyperbaric medicine. Manuscripts must be offered exclusively to the **EJUHM**, unless clearly authenticated copyright exemption accompanies the manuscript. All manuscripts will be subject to peer review, with feedback to the authors. Accepted contributions will be subject to editing.

Manuscripts are accepted in English, and also in major European languages (French, Spanish, Italian and German) when accompanied by an English abstract and a letter of recommendation of a member of the **International Editorial Board**.

Contributions should be sent to

Dr. Peter HJ Mueller, Editor EJUHM, C/o HBO-Zentrum Rhein-Neckar am Diakoniekrankenhaus Mannheim, Speyerer Strasse 91-93, D-68163 Mannheim/Germany. Fax: +49-621-8102 393. Phone: +49-621-8102 390. E-mail: eubs@hbo-mannheim.de

Requirements for Manuscripts

The **EJUHM** is composed on a PC using Word processing. Documents are acceptable on disc or by e-mail. Illustrations and tables should **NOT** be embedded in the Word document, only their position indicated. All tables are to be separate documents. Illustrations should be separate documents in Word or TIFF, clearly marked with the format used. **References should be in the correct format, shown in the next column.** Submissions must be accompanied by two printed copies of all text, tables and illustrations.

The printed copies should be double-spaced, using both upper and lower case, on one side of the paper only, on A4 paper. Headings should conform to the format in the **Journal**. All pages should be numbered. No part of the text should be underlined. These requirements also apply to the abstract, references, and legends to figures. Measurements are to be in SI units (mm Hg are acceptable for blood pressure measurements) and normal ranges should be included. All tables should be double spaced on separate sheets of paper. **No vertical or horizontal rules are to be used.**

Photographs should be glossy black-and-white and slides should be converted to photographs before being sent. Colour reproduction is not available. Legends should be less than 40 words, and indicate magnification.

Abbreviations do not mean the same to all readers. To avoid confusion they should only be used after they have appeared in brackets after the complete expression, e.g. decompression illness (DCI) can thereafter be referred to as DCI.

The preferred length for original articles is 2,500 words or less. Inclusion of more than 5 authors requires justification. Original articles should include a title page, given the title of the paper and the first names and surnames of the authors, an abstract of no more than 200 words and except in unusual situations be subdivided into Introduction, Methods, Results, Discussion and References. After the references the authors should provide their initials and surnames, their qualifications, and the positions held when doing the work being reported. One author should be identified as Correspondent for the Editor and for readers of the Journal. The full current postal address of each author, with the Telephone, facsimile numbers and e-mail address of the corresponding author, should be supplied with the contribution. No more than 20 references per major article will be

accepted. Accuracy of the references is the responsibility of authors. Acknowledgments should be brief.

Abstracts are also required for all case reports and reviews. Letters to the Editor should not exceed 400 words (including references which should be limited to 5 per letter).

References

Authors are responsible for verifying references against the original documents. References must be numbered consecutively in the order in which they first appear in the text, and identified in the text by arabic numerals in parentheses. References cited only in tables or legends should be numbered in accordance with a sequence corresponding to the first mention of the table or figure in the text. The reference list must be double spaced. List names and initials of all authors when six or less, when seven or more, list only the first three authors and add et al. Citations in the reference list are to be in the form used by the U. S. National Library of Medicine and *Index Medicus*.

1. Thorsen E, Risberg J, Segadal K, Hope A. Effects of venous gas microemboli on pulmonary gas transfer function. *Undersea Hyperbaric Med* 1995; 22:347-353.
2. Hempleman HV. History of decompression procedures. In: Bennett PB, Elliott EH, eds. *The physiology and medicine of diving*. London: WB Saunders, 1993:324-375.
3. Kindwall EP, Goldmann RW. *Hyperbaric medicine procedures*. Milwaukee, WI: St. Luke's Medical Center, 1970.

Manuscripts that have been accepted should be cited in the reference list as regular references, with "in press" in place of journal pages. Citations such as "unpublished observations", "personal communication", "manuscript in preparation", or "to be published" are not to appear in the reference list, although reference to such a communication, if it exists in written form, may be cited in the text in parentheses. References to government reports should not be cited unless such reports are easily available to all readers.

Consent

The **EUBS** endorses the principles of the Declaration of Helsinki on the treatment of human subjects and approved guiding principles in the care and use of animals. Any report of experimental investigation on human subjects must contain evidence of informed consent by the subjects and of approval by the relevant institutional ethical committee.

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EUBS Annual Scientific Meeting 2001

EUBS 2001 - 27th Annual Meeting of the European Underwater and Baromedical Society on Diving and Hyperbaric Medicine

Hamburg, Germany

September 12 - 16, 2001

Dear Friends and Colleagues,

it is my great honour to announce the **EUBS 27th Annual Meeting** and cordially invite you all together with your partners and families to come to Hamburg, where I have the pleasure of hosting our **2001 EUBS** annual meeting as your **Secretary General**.

The scientific program will include invited lecturers, oral and poster presentations, and, supported by you, a broad forum of discussion.

Besides the **EUBS** conference with it's scientific topics like

- pressure physiology and medicine
- diving physiology
- diving medicine
- maritime medicine
- physiology of hyperbaric oxygen therapy
- clinical hyperbaric oxygen therapy
- hyperbaric oxygen technology
- hyperbaric oxygen safety

satellite workshops on the special aspects of tropical diving vacations and on the fitness to dive, hosted by the **GTUM (German Society of Diving and Hyperbaric Medicine)** and an international satellite symposium on physics, chemical and biological hazards of working under hyperbaric and diving conditions will be offered. The scientific program will be rounded off by a **DAN Europe** seminar.

Preliminary scientific program in detail:

- September 13 to 15: EUBS 2001 Annual Scientific Meeting

- September 12: 3rd Hamburg Symposium on Occupational Risks in Hyperbaric Tunnelling and Commercial Diving – Physical, Chemical and Biological Hazards in Hyperbaric Environments
- September 16: Full day presentation: Fitness Standards for Recreational Divers
- September 12: Satellite 1 - Symposium on Selected Tropical Medicine Topics in Diving Medicine
- September 13: Satellite 2 - 2nd International "Arthur-Bornstein-Workshop" on Compressed Air Work and Deep Diving in Tunnel Construction

The conference centre and most accommodation facilities are located at the **Hotel Inter-Continental** (http://www.interconti.com/germany/hamburg/hotel_hamic.html), ideally situated on the attractive waterfront of the outer part of the city's lake Alster and within walking distance to the city centre of **Hamburg**. Mid September in **Hamburg** offers a late summer atmosphere.

With the second largest port in **Europe**, **Hamburg** is a media and trade metropolis, a gateway to the world. I can assure you a very personal experience whatever the point of attraction – be it the river Elbe, the Alster lake, the Jungfernstieg boulevard, city arcades, art galleries or night life in St. Pauli's "Reeperbahn".

Besides the scientific program interesting and entertaining satellite programs for participants and partners will be offered as well as a full partner program. Special packages for exiting pre- and post-conference activities and tours will be available.

The First Announcement and Call for Papers will be mailed individually in December. The Final Announcement with all details will follow in February 2001. Full details of all activities are available on the **EUBS** website (<http://www.eubs.org>) as well - according to the meeting's planning stage.

We look forward to welcoming you to our **EUBS** meeting the coming year in **Hamburg**!

Yours sincerely,

Dr. Ulrich van Laak
Secretary General EUBS 2001 Hamburg



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