

Newsletter: May 2012

MEDICHEM: Occupational and Environmental Health in the Production and Use of Chemicals

Founded 1972 in Ludwigshafen, Germany

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Dr. Shrinivas Shanbhag (India)
Dr. Edwin Whiteside (New Zealand)
Dr. Avi Wiener (Israel)
Dr. Robert Winker (Austria)

Message from the Secretary

Dear Colleagues:

Happy Anniversary! This year marks 40 years since MEDICHEM first met in April 1972, and I'm pleased to include a message from one of our founders, and honorary President, Dr. Alfred M. Thiess.

Once again, it's time for you to consider whether you might be interested in running for the MEDICHEM Board. This year two Board members are up for re-election – Dr. Steffen Hitzeroth and Dr. Robert Winker. For those who are new MEDICHEM members, Board members can only include one person from a country, with the exception of the Executive officers, who may be from the same country as others serving on the Board. This year, we cannot accept candidates from the following countries: **Bulgaria, Croatia, Germany, Greece, India, Israel, Japan, Malaysia, Mexico, the Netherlands, New Zealand, South Africa, Taiwan, or Turkey.** If you

would like to serve on the Board, or if you know someone who would be interested, please complete the nomination papers at the end of the Newsletter, and return to me by email or fax before **June 30, 2012**. Board members are also required to be members of the International Commission on Occupational Health (ICOH), either at the time of joining the Board, or shortly thereafter.

Since the last Newsletter, two MEDICHEM events have occurred – the first, a one-day Congress in Vienna, Austria, hosted by Board member Dr. Robert Winker, and the second, a mini-Symposium organized by Dr. Michael Nasterlack as part of the recent ICOH meeting in Cancun, Mexico. Selected abstracts from each of these events are included in this issue; additional contributions will be included in the next newsletter.

As always – any news, upcoming meetings, or articles of interest to the members are welcome.

Dr. Diane J. Mundt
Boston, MA (USA)



MEDICHEM celebrates 40th anniversary in 2012

Birthdays and anniversaries can be very exciting. So was the foundation of MEDICHEM in 1972 and its 40th anniversary in Cancun/Mexico on the occasion of the 30th ICOH Congress.

Our organization MEDICHEM was a carefully planned birth. It was planned over many years and fathered by medical doctors from the Chemical Industries worldwide. After the invention of the name “Medical doctors in the Chemical Industry” – I devised our emblem, a benzene ring with the Aesculapean staff. At the first MEDICHEM conference at the BASF site in Ludwigshafen (27 April – 30 April 1972) 258 participants from 22 countries listened to 63 scientific presentations. Since then 38 more congresses took place in cities around the world. It was a very wise decision to include our organization as a Scientific Committee under the umbrella of the ICOH (the former “Permanent Commission”). All our 39 conferences around the world focused on actual and ongoing problems, because MEDICHEM members were and are always concerned about the possible negative health effects caused by chemical substances. So, also in the future our goal will be the protection of our workers and customers.

As founder of MEDICHEM, I feel compelled to express my deepest thanks to all members, to all the Honorary Members, to all the past chairmen, secretaries and treasurers. Special words of

thanks and our deepest respect must be given in commemoration to all the colleagues who have passed away. Also great thanks to all the countries which hosted our 39 congresses.

How could MEDICHEM be so successful over the past 40 years? Here I must mention especially the last so greatly successful conference in Heidelberg 2011, organized by Dr. Maren Beth-Hübner, with participants from 30 countries present. One word has become, and it will always remain, the key to our efficiency: “Together.” The future of MEDICHEM is in good and capable hands and after 40 years I have only to say: “Many, many thanks”. Further good luck to MEDICHEM.

Fred Thiess

Founder and Honorary President of MEDICHEM



One Day Conference Held in Vienna, Austria

On November 8th 2011, the Institute of Occupational Medicine of the Medical University of Vienna in cooperation with TeamPrevent Austria and the General Austrian Accidence Insurance Company held a half-day mini-symposium on “Occupational carcinogens: exposure scenarios and health risk.” Attendance was well over 100, with both local and invited speakers, including members of the MEDICHEM Board.



Dr. Robert Winker

Organized by Dr. Robert Winker and his colleagues, topics included “old” carcinogens, such as asbestos, and early detection methods for mesothelioma – as well as “new” exposures, such as engineered nanomaterials, and how to keep track of these workers using exposure registries, should future research lead to the need for identifying those who may be at some increased risk. All presentations are available at this website:

https://www.sozialversicherung.at/portal27/portal/auvportal/channel_content/cmsWindow?action=2&p_menuid=1765&p_tabid=2&p_pubid=651355



Dr. Michael Nasterlack chaired a session for the mid-term meeting (left); Dr. Katharina Klien presents an overview of state of the science of nanoparticles.

Mid-term Board meetings have been successfully held in conjunction with local mini-symposia that attract researchers, students, government officials and others interested in occupational chemicals and health-related questions. If you are interested in hosting a mid-year Board meeting and associated mini-symposium, please do not hesitate to contact any of the Board members listed on the first page of the Newsletter.



Working Graveyard Shifts - the Next Step to the Graveyard?

Presented by: Dr. Michael Nasterlack, MD; BASF SE, Ludwigshafen, Germany during the successful mini-symposium held at the March 2012 ICOH meeting in Cancun, Mexico.

Introduction

Nearly 20 % of the working population in Europe and North America is engaged in shift work, and it is quite obvious that for technical, cultural and economic reasons shift work cannot

simply be avoided in a modern society. Shift work involving night work (for the sake of simplicity only referred to as “shift work” in the following) poses several challenges to those who perform it, by interfering both with biological and social circadian rhythms. While the latter fact can usually be adjusted for through appropriate organizational measures, the former has been found much more difficult to address. This so-called “chronodisruption” has been associated with a wide range of adverse health effects, where shift workers may be at a higher risk if compared to day workers (Garautet and Madrid 2009, Straif et al. 2007, Erren et al. 2009).

What are the main health effects possibly associated with shift work?

The short-term effects of performing shift work are rather straight-forward and can easily be compared to those of a jet lag after a flight across several time zones. They include, above all, sleep disturbances, fatigue and gastrointestinal malfunction. It has further been demonstrated that a jet lag can temporarily affect immune functions. An elevated risk of accidents, both at work and while commuting, has also been described and attributed to sleep deficits. Regarding the long-term health effects of shift work, more than half a century of research has provided a wealth of observations, however, also yielded a considerable variability of findings across studies (Knutsson 2003). Gastrointestinal diseases, namely peptic ulcers, have been found more frequently in shift as compared to day workers, but this has also been the case for *Helicobacter pylori* infection as a major risk factor for these ulcers (Zober et al. 1998). Small to moderate excess risks for cardiovascular disease and hypertension have been found in some, but not all studies, and failure to demonstrate an elevated risk has sometimes been attributed to a “healthy survivor” effect. A number of, mostly small and cross-sectional, studies indicate that shift work may also increase the risk for metabolic disorders including hypertriglyceridemia and diabetes, thus providing a possible link to the purported cardiovascular effects, and well in accordance with the often reported higher prevalence of obesity in shift workers (Garautet and Madrid 2009). Finally, in 2007 an expert Working Group convened by the IARC Monographs programme has concluded on the basis of “limited evidence in humans for the carcinogenicity of shift work that involves night work”, and “sufficient evidence in experimental animals for the carcinogenicity of light during the daily dark period (biological night)” that shift work that involves circadian disruption is probably carcinogenic to humans (Group 2A)” (Straif et al. 2007).

Since the IARC assessment, several new studies have been published, with inconclusive results. Heterogeneity of study exposures and outcomes and emphasis on positive but non-significant results make it difficult to draw general conclusions. Further data are needed on additional disease endpoints and from different study populations. Also, several reviews and commentaries, which have been published meanwhile, came to equivocal results. Published evidence is widely seen as suggestive but not conclusive for an adverse association between

night work and breast cancer, and limited and inconsistent for cancers at other sites and all cancers combined (Wang et al. 2011).

Challenges in studying shift effects

There exists a large variability of shift work organization schemes across countries and across industries. Shift patterns may be clockwise or counter-clockwise rotating and involve few or many night shifts in a row or even permanent night shift. Shift duration may be anything between four and twelve hours. Almost needless to say that, depending on type of work and industry, other exposures may be linked to shift work which themselves can pose health risks on their own. Notorious examples from two widely studied occupational groups in shift work research may be cosmic radiation in flight attendants and handling of chemotherapeutic drugs by nurses. Shift workers may differ from day workers because of selection effects that may occur not only at entry to the respective occupational groups but also throughout later working life, specifically if shift work is discontinued for health reasons. The direction of the resulting bias is usually expected to tend towards a “healthy worker effect” in shift workers. On the other hand, life style and dietary factors have often been described as substantially different between shift and day workers, with the less favorable habits being more prevalent in the former group. These potential sources of bias make the interpretation of shift study findings, and even more comparisons across studies in different populations, challenging.

The solution may not only lie in the shift work system

More than half a century of shift work research has provided some insights into advantages and disadvantages associated with different shift schedules. It is mostly agreed that shift patterns should be fast forward rotating, with shift duration inversely related to physical and psychological work load, and involving not more than three night shifts in a row. In addition to an improved shift organization, regular occupational medical surveillance, counseling and health promotion activities have been shown to be effective in avoiding excessive adverse health effects of shift work. In our own studies we observed a lower accident risk and neither an elevated risk of total mortality nor an increased incidence of cancers in a cohort of more than 14,000 BASF shift workers compared to 17,000 day workers (Ott et al. 2009, Oberlinner et al. 2009). Additional analyses provided evidence that this “lack of effect” was indeed at least partially attributable to the health prevention programs performed at our site over the past decades (Ott et al. 2010).

Conclusion

There is evidence and biological plausibility that shift work including night work may adversely affect the health of those who perform it. However, there is also evidence that shift schedules can be organized in ways that minimize the associated health risks, and the risks may be further

reduced or even completely avoided through the implementation of structured and sustained health promotion programs specifically tailored to the needs of shift workers. They may thus see the graveyard not earlier than their day-working colleagues.

References

- Erren TC, Morfeld P, Stork J, Knauth P, von Mülmann MJ, Breitstadt R, Müller U, Emmerich M, Piekarski C (2009) Shift work, chronodisruption and cancer? - The IARC 2007 challenge for research and prevention and 10 theses from the Cologne Colloquium 2008. *Scand J Work Environ Health* 35:74-79
- Garaulet M, Madrid JA (2009) Chronobiology, genetics and metabolic syndrome. *Curr Opin Lipidol* 20:127-134
- Knutsson A (2003) Health disorders of shift workers. *Occup Med* 53:103-108
- Oberlinner C, Ott MG, Nasterlack M, Yong M, Messerer P, Zober A, Lang S (2009) Medical program for shift workers - impacts on chronic disease and mortality outcomes. *Scand J Work Environ Health* 35:309-318
- Ott MG, Oberlinner C, Lang S, Hoffmann G, Nasterlack M, Pluto R-P, Trauth B, Messerer P, Zober A (2009) Health and safety protection for chemical industry employees in a rotating shift system: program design and acute injury and illness experience at work. *J Occup Environ Med* 51:221-231
- Ott MG, Yong M, Zober A, Nasterlack M, Messerer P, Pluto R-P, Lang S, Oberlinner C (2010) Impact of an occupational health promotion program on subsequent illness and mortality experience. *Int Arch Occup Environ Health* 83:887-894
- Straif K, Baan R, Grosse Y, Secretan B, El Ghissassi F, Bouvard V, Altieri A, Benbrahim-Tallaa L, Coglianò V (2007) Carcinogenicity of shift-work, painting, and fire-fighting. *Lancet oncology* 8:1065-1066
- Wang X-S, Armstrong MEG, Cairns BJ, Key TJ, Travis RC (2011) Shift work and chronic disease: the epidemiological evidence. *Occup Med* 61:78-89
- Zober A, Schilling D, Ott MG, Schauwecker P, Riemann JF, Messerer P (1998) Helicobacter pylory infection: prevalence and clinical relevance in a large company. *J Occup Environ Med* 40:586-594



General Assembly Minutes – Cancun, Mexico

[As with all official MEDICHEM congresses, or those held in conjunction with ICOH, as was done this year, a General Assembly meeting is held for members in attendance. The Secretary is grateful to Dr. Steffen Hitzeroth for completing the Minutes provided here, as I was unable to attend this meeting. Dr. D. Mundt]

The meeting of the MEDICHEM General Assembly was called to order at 17:45, Tuesday, March 20, 2012. Approximately 15 people were in attendance.

Item 1 – Welcome. Dr. Thirumalai Rajgopal welcomed the participants to Cancun and the General Assembly meeting.

Item 2 – Approval of minutes. The minutes of the General Assembly meeting from June 2011, Heidelberg, Germany, were approved by the membership.

Item 3 – Approval of the agenda. There were no changes to the agenda.

Item 4 – New Board members. A new board member elected in 2011 was introduced – Dr. Vedat Mizrahi (Turkey) who was present at the General Assembly.

Item 5 – Officers’ reports. Officer reports from the President and Treasurer were provided. Dr. Rajgopal indicated that the mini-Symposium held in Vienna, Austria last October was a great success. Dr. Hitzeroth provided the Treasurer’s report.

Dr. Nasterlack reported that 11 papers from the Heidelberg Congress and Viennese mini-symposium had been submitted to the *Archives of Industrial Hygiene and Toxicology*; to date, two papers have been accepted and three were rejected.

Dr. Rajgopal reported that the MEDICHEM handbook was in the process of being updated. Additionally, the MEDICHEM Newsletter will be sent electronically in the future and shall only be sent by mail if a request is made to the Secretary of MEDICHEM.

Dr. Hitzeroth then presented the Treasurer’s report, which included details about paid membership fees by sustaining members and single members. The list of sustaining members had not changed since last year. Unfortunately MEDICHEM has lost about 75 members who were not prepared to pay their dues despite a couple of notifications. The report also included details of money paid for Scholarships and Young Professionals. Finally the report had been approved by Mr. Winfried Paul, the auditor of our accounts, and the Board offered thanks for his hard work and for Mrs. Andrea Cuadrado, Dr. Hitzeroth’s assistant. There were no additional questions by the Members.

Item 6 – Future MEDICHEM Congresses. The next MEDICHEM congress will be held in Istanbul, Turkey, September 19-21, 2013. Dr Mizrahi (Unilever) presented information about different hotel options in Istanbul including their prices. He will lead all preparations and logistics. In 2014, the MEDICHEM Congress will be held in Casablanca, Morocco and will be led by Dr. El Kholti and Dr. Slaoui. For 2016 (after ICOH Seoul, 2015) the offer was made to hold the congress in Lima/Peru.

Item 7 – Honorary Members. Dr. Rajgopal announced two new honorary members and gave his congratulations to: Dr Andreas Flückiger (present) and Dr Todor Popov (absent).



Dr. Flückiger and his wife Martha at MEDICHEM meeting in Heidelberg, Germany

Item 8 – Other business. It was recommended by one participant that MEDICHEM should be available on social media like Facebook or Twitter. It was also proposed to provide members a chance to pay for 3 years, with a discount of 20 € (3 years membership shall cost 100 €). This proposal was discussed and accepted. Then the question came up how long board members could stay on the board. There is no time limitation. The chair can be held for two terms (of three years) only.

Dr. Rajgopal again thanked all participants. The meeting adjourned at 18:25.



Board members in action – (left to right, front) Michael Nasterlack, Peter Boogaard, Thirumalai Rajgopal (Chairman); (left to right, back) Abed bin Onn and Steffen Hitzeroth (Treasurer)

Condolences

Dr. Emilio Bartalini

With deep sadness I have to announce that Prof. Dr. E. Bartalini, co-founder and honorary member of MEDICHEM, passed away on 13 January 2012.

Only half a year before his 100th birthday, which would have taken place on 27th May 2012, in his last letter – Milan 19.12.2011 in which he sent his best wishes on the occasion of my 90th birthday – he wrote:

“I have to say that according to my age you are my younger brother. In fact, I tell you that, if God shall wish it, on May 27 of next year 2012 I will become 100 years old”, and further “I am sure I will feel you near to me with your heart and mind when, as I hope, I will celebrate my hundredth year, and I ask you to remember those few members that, together with you and me, gave life to MEDICHEM. “

Prof. Dr. Emilio Bartalini, co-founder and honorary member of MEDICHEM, had responded enthusiastically to my invitation to create our organization MEDICHEM in 1972, and he belonged to the first Board. In 1974 he organized the second MEDICHEM congress in Milan with the themes: “Chromosome Aberrations by Industrial Chemicals” and “Vinyl Chloride Toxicity”.

It was a great conference, sponsored by Mont-Edison. In very many MEDICHEM Congresses that followed he was present, with his dear wife Lia always at his side. On the occasion of the ICOH Congress 2005 in Milan he generously invited us all to his private house, which I always remember for its decoration with museal paintings.

Dear Emilio, I will always have to thank you for your great support during all these years from 1972 – 2011. I do this from the bottom of my heart and include your dear wife Lia and your son Guido. In you, MEDICHEM has lost a faithful, dedicated and always active member.

Prof. A.M. Thiess,
Founder and Honorary President
Germany

Dr. Kazuo Hashimoto

Dr. Kazuo Hashimoto passed away, April 29, 2011. His wife, Mrs. Suzuko Hashimoto, wishes to thank the MEDICHEM members for the companionship and friendship offered her husband over the many years.



Welcome to New Members

Dr. Delgerdalai Batmyagmar, (Vienna)

Dr. Ali Riza Ceyhan, (Turkey)

Mr Jorge Mario Gallego Perez (Columbia)

Dr. Pauol Itapura de Miranda (Brazil)

Dr. Michael Shannon (Ireland)

Dr. Ahmet Tellioglu (Turkey)



Announcement

Candidates for MEDICHEM Board 2013 – 2016

The nomination must be made by a MEDICHEM Member in good standing.

I, __(type your name here)_____, wish to nominate __(type Candidate name here)_____ to the MEDICHEM Board (Term of office 2013 - 2016).

The candidate must be a MEDICHEM Member in good standing. **The candidate must also be an ICOH Member in good standing or agree to join the ICOH if elected.**

*Members from Bulgaria, Croatia, Germany, Greece, India, Israel, Japan, Malaysia, Mexico, the Netherlands, New Zealand, South Africa, Taiwan, Turkey, **cannot** be candidates in this year's Board election.*

The candidate must confirm his/her agreement to stand by signing at the bottom of this form.

I agree to be a candidate for the MEDICHEM Board: _____(sign and date here)_____

Email this form to:

Dr. Diane J. Mundt
Secretary MEDICHEM
ENVIRON International Corporation
Email: dmundt@environcorp.com

MUST REACH THE MEDICHEM SECRETARY BY JUNE 30, 2012