

A report on the International Occupational and Environmental Cancer Prevention Conference, Stirling University, Scotland, April 2008

Resoconto del Convegno Internazionale sulla Prevenzione dei Tumori Occupazionali ed Ambientali, Università di Stirling, Scozia, Gran Bretagna, aprile 2008

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Summary

The conference examined research to develop policy and to influence practice and produce a coherent approach to occupational and environmental cancer prevention. The event flowed from

Riassunto

Il convegno ha esaminato gli studi sullo sviluppo di una linea di condotta, per influenzare le procedure e per produrre un approccio coerente alla prevenzione del cancro occupazionale e ambientale. L'e-



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“Hazards Magazine” reports on occupational cancer, the Global Unions’ Zero Occupational Cancer Campaign and a number of conferences for NGOs on the same subject held in the UK since 2006. Researchers, governmental and non-governmental organisation staff and activists from across the world attended the conference that was followed by a day of workshops to further develop strategies on cancer prevention. Contributions from USA, Australia and France set the scene on assessing the occupational and environmental cancer burdens globally and how to use such data to develop preventive strategies. The World Health Organization (WHO) and European agencies’ approaches (European Agency for Safety and Health at Work and the European Environment Agency) that promoted either international campaigns or rigorous analyses of the past failures to act were outlined. A Canadian Cancer Prevention scheme was described that emphasised action now on carcinogens, and a well established and carefully evaluated United States approach that had also reduced the usage of carcinogens was presented. International and national trade union and NGO groups documented successfully tackling some of the global and local policy and practice challenges. Complexities and difficulties of effective cancer prevention in the workplace and wider environment were not neglected – in terms of assessing exposures, recording and reporting cancers and tackling new hazards such as nanotechnology. However, practical, cost-effective and workable solutions remained to the fore of the event. *Eur. J. Oncol.*, 13 (2), 115-121, 2008

Key words: cancer prevention policies, NGOs, WHO

Introduction

Cancer prevention has been discussed over many centuries with regard to occupational and environ-

mento deriva da relazioni sul cancro occupazionale dello “Hazards Magazine”, dalla campagna sul cancro occupazionale della *Global Union* e da un discreto numero di conferenze per organizzazioni non governative (ONG) sullo stesso argomento tenutesi nel Regno Unito dal 2006. Ricercatori, staff di organizzazioni governative e non, e attivisti da tutto il mondo hanno partecipato al convegno, poi seguito da una giornata di seminari e *workshop* atti a sviluppare ulteriori strategie sulla prevenzione del cancro. Contributi dagli Stati Uniti, dall’Australia e dalla Francia hanno descritto la situazione accertando i danni globali del cancro ambientale e occupazionale e hanno descritto come utilizzare questi dati per sviluppare strategie preventive. Sono stati sottolineati i passi fatti dall’Organizzazione Mondiale della Sanità (OMS) e dalle agenzie europee (Agenzia Europea per la Salute e la Sicurezza sul Lavoro e Agenzia Europea dell’Ambiente) che hanno promosso campagne internazionali, o analisi rigorose degli errori del passato al fine di prendere provvedimenti. È stato descritto un progetto canadese sulla prevenzione del cancro che dava rilievo all’azione attuale contro i cancerogeni; ed è stato presentato un approccio statunitense già funzionante e attentamente valutato, che ha anch’esso ridotto l’utilizzo dei cancerogeni. Sindacati nazionali ed internazionali e gruppi ONG hanno documentato l’impegno assunto per affrontare politiche globali e locali, e gli sforzi per metterlo in pratica. Le complessità e le difficoltà di una prevenzione efficace del cancro nel posto di lavoro, e più in generale nell’ambiente, non sono state trascurate; in termini di accertamento delle esposizioni, di registrazione dei tumori e dell’affrontare nuovi rischi come l’uso delle nanotecnologie. Tuttavia le soluzioni pratiche, efficaci economicamente e realizzabili sono risultate le tematiche più importanti del convegno. *Eur. J. Oncol.*, 13 (2), 115-121, 2008

Parole chiave: misure di prevenzione dei tumori, ONG, OMS

mental exposures but rarely has it figured prominently, if at all, on recent public health agendas where lifestyle factors that relate to cancer causation overwhelm considerations of all other factors. The

preventive approach has been ignored despite warnings by several working in the field. Hueper in 1942 flagged the threat from new carcinogens and complex aetiologies linked to wider environment interactions involved in occupational cancer. His concerns then remain our concerns today. He further presciently noted in sentiments echoed by WHO in 2006/7 that:

occupational cancers represent a challenge to industry as well as public health agencies, as they are the only cancers the development and occurrence of which can be largely or completely eliminated, if proper precautionary measures are taken to prevent any undue contact of the workers ... or if the cancerogenic factors are excluded from industrial operations¹.

The recent conference in Stirling focussed not only on how research could and should inform policy and practice but why lack of research and limited data on cancer incidence in various occupational sectors should not provide an excuse for inaction on the carcinogens themselves. Much can and should be done now at an international, national and local level to prevent or reduce exposures to carcinogens listed by the International Agency for Research on Cancer (IARC) and other agencies. In this context, the importance of acting on toxicological research relating to known and suspect carcinogens rather than waiting for complex epidemiological factors to be unravelled is critical.

The science

Speakers at the conference identified the long term neglect of and the high toll taken globally and nationally by such cancers. Richard Clapp from Boston University, USA, set the scene by offering an overview on the global cancer statistics.

An estimated 12.1 million new cases of cancer were diagnosed worldwide in 2007, and 7.6 million people died of cancer that year. There were 1.5 million cases of lung cancer, followed by 1.3 million cases of breast cancer worldwide.

He provided information about some specific carcinogens as well as stressing the multi-factorial

and multi-stage nature of cancer and the dangers of relying on dubious attributable fractions. He noted the research literature on both occupational and environmental cancers was of course growing all the time and highlighted many further causes of concern. In this context he concluded that “*the new cancer prevention paradigm demands that we limit exposure to avoidable environmental and occupational carcinogens.....*” and that “*the current state of knowledge is sufficient to compel us to act on what we know*”. This paper underpinned the approach of many other presenters at the conference.

The latest catalyst for the serious scientific rethinking of the outdated occupational and environmental cancer estimates of the early 1980s came with the work of Lin Fritschi, now at the Western Australian Institute for Medical Research assisted by her colleague, Tim Driscoll, at the University of Sydney. They provided further context at the conference for their cancer estimates which in Australia produced figures of 11% of all male cancers being occupationally-related. The assumptions for their research and a number of qualifications were also discussed. However, their research had, as they hoped, increased the profile of occupational cancer in Australia and the process “*led to a number of initiatives being launched by government, trade unions and cancer organisations*”. Within Europe, Fritschi and Driscoll’s research had proved useful to many NGOs in their efforts to push policy makers and regulators to give greater priority to cancer prevention.

The conference also heard from Christophe Coutanceau about important studies that he, Annie Thebaud-Mony, Nathalie Ferre and colleagues had recently completed in France. The GISCOP93 study reconstituted job histories and exposure assessments of patients with cancer on a Paris suburb, Saint-Denis: 725 job histories were recorded between 2002 and 2007 and 84% of the interviewed cancer patients had been exposed to carcinogens in their work on average for 30 years. The team then went on to explore the effectiveness of French strategies on occupational carcinogens where prevention is considered an ‘optional cost’; where occupational physicians acted as advisors to employers and where labour inspectors had powers to prosecute but with occupational cancer emerging as a low ‘hidden’ priority.

Timo Kauppinen from the Finnish Institute of Occupational Health described the two exposure information systems in his country that were relevant to occupational cancer prevention: ASA was established in 1979 and was similar to some systems in Italy and Poland; and CAREX. ASA had had some, albeit limited, direct success in reducing workers' exposures to carcinogens and a number of direct benefits. He noted the work suggested "*a national exposure register stimulates preventive measures at workplaces*".

Jennifer Sass from the Natural Resources Defense Council, Washington DC, USA looked at the possible new occupational cancer threats presented by nanotechnology where research indicates that carbon nanotubes have startling microscopic similarities to asbestos fibres. Efforts to control nanotechnology with effective regulation have been limited yet usage of nanomaterials has been increasing in many commercial, cosmetics, and health and food sectors and, encouraged by substantial business and government-sponsored research and development, massively outweigh spending on research into potential risks and their avoidance.

The policy

Larry Stoffman chairs the Canadian National Committee on Environmental and Occupational Exposures (NCEOE) and described its work as a tripartite and multi stakeholder sub-committee of the Primary Prevention Action Group of the Canadian Strategy for Cancer Control. NCEOE endorsed the application of the precautionary principle as part of an essential strategy in primary cancer prevention. The committee conducted a 'best practices' review of primary prevention initiatives internationally and identified a series of important gaps in Canadian practice. These include: surveillance of hazards and exposed populations; the transmission of information through labelling and disclosure laws; education of public, workers and communities; the reduction of exposures to carcinogens through substitution or process changes; and legislation and regulation that contribute to cancer prevention.

The committee developed priority recommendations, which began to address the main gaps in Cana-

dian practice. These covered the following objectives:

- 1) to raise the profile of the primary prevention of the environmental and occupational exposures as a priority issue within provincial cancer control agencies/programmes;
- 2) to disclose the presence, use and release of classified carcinogens, as a necessary prerequisite to primary prevention in workplaces, the environment and the home;
- 3) to promote further legislation, regulation and policy, as required for primary prevention;
- 4) to establish the elimination, when possible, and minimization of exposure at all times for IARC Group 1 and 2A carcinogens as an objective for primary stakeholders and governments;
- 5) to develop opportunities for labour, industry, government and NGO collaboration in order to maximize effectiveness;
- 6) to focus activity on primary prevention strategies.

Specific provinces within Canada are developing their own strategies on occupational and environmental cancers. Ontario is now preparing a Toxics Use Reduction bill that will include specific clauses addressing carcinogens.

David Gee from the European Environment Agency (EEA) reviewed past actions on a series of occupational carcinogens in the context of the EEA's important work on the precautionary principle. He framed this within the context of the economic and other drivers that influenced employers and governments. He also made some germane points about the past and indeed current failures of epidemiology to address occupational carcinogens because of the discipline's record of producing false negatives in many of its studies and discouraging positive results.

Jukka Takala from the European Agency for Safety and Health at Work (EASHW) in Bilbao provided a profile of the toll of cancers in Europe, information on the role that the European Carcinogens Directive of 1990, revised in 2004, was playing in tackling occupational cancers and how that presented challenges for employers in terms of management systems and for EU states in terms of their national programmes, strategies and systems. In 2007, the EASHW had chosen carcinogens and occupational cancer as one of its priority topics and

was working on collating information for the European Commission about occupational exposure limits for carcinogens and mutagens. He also provided information about the Agency's recent projects on carcinogens.

Denis Grégoire, the Information Officer of the Health and Safety Department of the European Trade Union Institute (ETUI-REHS), a body accountable to the European Trade Union Confederation analysed the EU Carcinogens Directive. He noted that estimates of occupational cancers could range between 15-20% of all cancers in men. Research on women's occupational cancer risks was limited. Cancer was the main cause of death due to working conditions in Europe, with manual workers experiencing most exposure to carcinogens. His institute had responded to the consultations on the revisions of the 1990 EU Carcinogens Directive and expressed concerns about the reproductive toxins and the limited number of occupational exposure limit values set for carcinogens: for instance the omission of crystalline silica from these values.

The practice

Pam Eliason, the Industry Research Program Manager for the Toxics Use Reduction Institute at Lowell, University of Massachusetts, USA talked about toxics use reduction and its relevance to carcinogens. The Massachusetts Toxics Use Reduction Act was promulgated in 1989, after representatives from industry and advocacy groups reached consensus on its format. The unique law was estab-

lished to reduce hazardous waste generation including toxic chemicals and to create an emphasis on source reduction over pollution control and maintaining or promoting the competitive advantage of industry in Massachusetts. The Act allows Massachusetts companies who use toxic chemicals above reporting threshold amounts to voluntarily assess opportunities for modifying their products, processes or feedstock in order to make their overall business safer for workers and the environment. Although the focus of the Act was originally on minimizing the generation of hazardous waste, its flexible format and attention to the needs and interests of industry and advocates has allowed it to shift focus. The Act has had a positive impact on reducing the use of carcinogens in Massachusetts and six chemicals of particular interest were discussed: lead, chromium, cadmium, trichloroethylene, formaldehyde and di (2-ethylhexyl) phthalate.

Henning Wriedt from Beratungs und Informationsstelle Arbeit & Gesundheit, Hamburg, Germany discussed the complex German Occupational Exposure Limits for Carcinogens and a proposal for a preventive approach supported by the trade unions. The approach can be integrated into the Hazardous Substance Ordinance without fundamental changes to the Ordinance. It introduces three risk bands that enable operationalisation of the minimization principle. It is a dynamic concept provided by graded, substance-independent set of control measures. The resulting urgency to act is driven by the extent of the remaining risk which, in turn, is determined by the level of the exposure. There is transparency on risk quantification and implementation exposure reduc-



Speakers at the conference, Fiona Murie, BWI Health and Safety Officer, and Larry Stoffman, Chair of the Canadian NCEO



One of the workshop groups meeting on the day following the conference

tion. The approach only abandons ‘zero risk’ if substitution is impossible and where there is transparency for regulatory bodies on high risk areas. The trade unions expect that reduction of high risks will be prioritized. Where high risk tasks cannot be reduced currently then either development of specific solutions for exposure reduction or a phased plan for removal of risks should be introduced. It is hoped the demand would develop in the long run that risks posed by carcinogens should not be higher in the work environment than in the general environment.

Simon Pickvance from the Sheffield Occupational Health Advisory Service (SOHAS), England described an audit of patients with bladder cancer in four general practices (primary care units) in Sheffield, a large industrial city in England. The audit produced a previously unsuspected carcinogen in the iron and steel industry and some preliminary evidence supporting recent reports on cadmium as a bladder carcinogen. The work of this project over many years reveals the importance of good occupational history recording and the time and knowledge to obtain them. The UK system currently fails to attribute most cases of occupational cancer to work. For Pickvance, *“assessing work-relatedness of cancers raises general questions of inference in indi-*

vidual cases that are relevant to enforcement, compensation and death certification”. This type of approach adds to the research evidence base, contributes to policy developments and ensures good practice in working in the occupational health field on carcinogens.

Fiona Murie from the Building and Woodworkers’ International (BWI) in Geneva, Switzerland, reviewed the extensive exposures of many of its construction and timber trade workers to carcinogens across the globe. In addition to exposures to asbestos, she also highlighted the cancer risk to her members from silica, paints, wood dust, diesel exhaust, solvents, pesticides, and formaldehyde. BWI, with over three hundred trade unions with over twelve million members in one hundred and thirty five countries, had committed itself to international occupational cancer prevention campaigns.

Rory O’Neill from the Occupational and Environmental Health Research Group at Stirling University and “Hazards Magazine” focussed on the human costs of occupational cancers. He estimated that between 8% and 16% of all cancers in the UK were occupationally-related, yet that there had never been an effective official campaign on occupational and environmental cancers in Great Britain. In stark

contrast, British unions had been instrumental in first identifying a number of workplace cancers, from bladder cancer in dye workers to liver cancer in vinyl chloride workers using surveys, risk maps and body maps and reviews of existing sources (workplace sick leave, accident, compensation and pension records, and retired member accounts). This need not be a highly scientific and time-consuming activity. Practical interventions by workers would include: insisting on removal of carcinogens where possible and substitution with less hazardous substances or safer work methods; set priorities for action; and ensure workers with work-related cancers are given the support they need and receive any sickness or compensation payments to which they are entitled. A 2007 re-evaluation for the UK statutory safety body the Health and Safety Executive (HSE) suggested that, for a working generation, the HSE had underestimated the occupational cancer toll by thousands of cases a year. This gross under-estimation of risk had in turn led to an under-estimation of the necessity for and the benefits of prevention. Each occupational cancer death is costed by HSE in excess of 3 million euros: the economic case alone for prevention is compelling.

Laurie Kazan-Allen from the International Ban Asbestos Secretariat (IBAS), England presented an analysis of the work of the highly successful international ban asbestos campaign movement over many years that involved victims' groups, trade unions, lawyers and other social partners in civil society. Despite powerful industry and vested financial interests, the campaign mobilised globally and has succeeded in reducing asbestos usage. Over the years, most industrial countries had prohibited or seriously restricted its use. The campaign has also ensured that international agencies and scientific bodies accepted the evidence of the health effects of all forms of asbestos. There are many lessons to be learnt from the asbestos experience worldwide in developing effective action against other carcinogens.

John McClean, the National Health and Safety Officer for Britain's general trade union, the GMB, outlined how his union had been involved with two

large workplace cancer campaigns: asbestos and passive smoking at work. The union, he indicated, was now committed to raising awareness and developing campaigns on the broader occupational cancer front.

Conclusions

The conference and workshops identified the value of bringing a range of international social partners together to explore both the scientific but also the policy and practice bases for developing international, European, national and local action on occupational and environmental cancers through cancer prevention programmes and well co-ordinated local, national and international toxic reduction campaigns. The causes of workplace and environmental cancers were investigated as were the best means to prevent or reduce exposures but so too was the need for support, legal redress and compensation for those who contracted such cancers. How better diagnosis, recording and reporting of cancers could lead to quicker action fed into discussions. The meeting ran the gamut of cancer epidemiology, policy development, regulatory standards, worker action and community engagement and, it is hoped, will lead to more concerted and effective action on the subject in the future.

It is clear from the evidence presented that there are entirely practicable measures already in operation around the world to both record and reduce occupational exposures to carcinogens. Replicating existing best practice across the globe would greatly reduce the toll of occupational cancers.

References

1. Hueper WC. Occupational tumours and allied diseases. Springfield, Illinois: Charles C Thomas, 1942.

The web page for conference power point presentations can be found at: <http://www.nm.stir.ac.uk/research/occupational-environmental-cancer.php>

