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Spring Scientific Day

Pictured from Left to Right : Dr Ken Addley, Dr John Gallagher, Dr Fiona Donnelly, Dr Conor Burke, Prof John Anderson, Dr Martin Hogan

The Faculty of Occupational Medicine Spring Scientific Day took place on Friday 7th April 2006 in the Royal College for Physicians in Dublin. The clinical updates given by speakers are summarised below by Dr Tom O'Connell

Dr Conor Burke, Consultant Respiratory Physician, Connolly Hospital, Dublin

In relation to new onset adult asthma, about 15% of cases are believed to be occupational in origin. That said, many cases of new onset asthma occurring in the work place, even in hazardous workplaces, have a non-occupational aetiology.

Asthma occurring in the workplace can be divided into 3 different categories, namely new onset occupational asthma, work aggravated pre-existing asthma, and the development of occupational asthma on the background of pre-existing asthma.

Occupational asthma in turn can be divided into 2 different sub-categories, namely immunologically mediated occupational asthma (about 90% of cases) and non-immunologically mediated asthma (10% of cases).

Almost 420 chemicals have been demonstrated to be causes of immunologically mediated occupational asthma. There is always a latent period for onset, and asthma does not occur following first exposure to chemicals. Sensitisation normally occurs within the first 1 to 2 years of exposure, although not all sensitised individuals go on to develop clinical symptoms.

Non-immunologically mediated occupational asthma is also known as RADS (Reactive Airways Dysfunctions Syndrome). There is no latent period for onset, and symptoms occur within 12 hours of exposure. A high dose is needed to produce clinical symptoms. It also affects the nose and throat and may produce upper airway symptoms as well.

The gold standard test for diagnosis of occupational asthma is a positive challenge test. This is time intensive, and is not without risks. The employee needs to be exposed to a concentration of the chest substance that is the same as that occurring in the workplace.

To diagnose asthma, either reversible airway dilation through bronchodilator challenge or reversible airway constriction through a bronchoconstrictor challenge needs to be demonstrated. The latter may be of benefit where an individual's asthma is already well controlled with medication.

The prognosis of occupational asthma is related to the duration of exposure and to the baseline lung function at presentation.

Dr Burke also talked briefly about ABPA (Allergic Bronchopulmonary Aspergillosis) and obesity. ABPA is an asthma like illness, that also incorporates features of bronchiectasis. Cough and sputum production are prominent, and the skin and IgE tests for aspergillosis are positive. Treatment is similar to that of asthma, but with more aggressive treatment doses needed

Finally, Dr Burke talked about how obesity can impact on respiratory function. Significant obesity can decrease the diaphragmatic expansion of lungs by up to 20%, and thus weight loss of 2-3 stone or more can often increase a lung function by 20% or more.

Professor John Anderson, University of Ulster

Professor Anderson gave a detailed presentation on the history of automated electronic defibrillators (AEDs). He noted that 60% of deaths due to acute myocardial infarction occur within the first hour of onset, often either out of hospital or on the way there. Initial portable defibrillators in the 1970's were very heavy and bulky, and thus were not very successful. However technology has progressed to a stage where new AED's currently under development may be only a little larger then a CD case, and may cost as little as $100.

Doctors Declan Whelan, Brendan McCarthy & Donal Collins pictured at the Spring Scientific meeting

Dr Tony O'Sullivan, General Practitioner

Dr Tony O'Sullivan gave an update of current issues and diabetes on behalf of the Diabetes Federation of Ireland. He outlined that we are now facing an epidemic of type 2 diabetes, which is related to an increase in obesity levels in the population as a whole. Type 2 diabetes is now being diagnosed at a younger age, and Dr O'Sullivan recently diagnosed an individual in their early twenties with type 2 diabetes. Not all cases of type 2 diabetes are related to obesity, and it can occur in people with normal BMIs.

Dr O'Sullivan went on to describe new developments that are taking place in the development of both insulin analogues and oral hypoglycaemic agents.

The trend in modern insulin therapy is a single daily dose of long-acting human insulin (such as Lantus) along with a short-acting insulin dose at mealtime, titrated to the carbohydrate dose in the meal. Also, new oral hypoglycaemic agents have been launched, that are not associated with a high risk of hypoglycaemia.

A new class of drugs known as incretins are under development that facilitate the cell regeneration in the pancreas and also weight loss. Currently these are available in injectable form only. Thus, in the near future, diabetes may be receiving injectable medications that are not insulin analogues.

In regard to shift work, Dr O'Sullivan advocated a single daily dose of long-acting insulin such as Lantus to provide 24 hour suppression of glucose levels, along with taking short-acting insulin with each meal during the shift.

Dr O'Sullivan concluded by giving his personal view that current restrictions on diabetics in the workplace are excessively restrictive. He outlined how various restrictions in regard to diabetics and work are not uniform between EU countries and various other non EU countries.

Dr Ken Addley, Director of the Northern Ireland Civil Service Occupational Health Department

Dr Ken Addley gave an informative presentation on the very topical issue of Avian Influenza. This issue was previously covered in the January edition of this news letter.

Human influenza has an incubation period of 1-3 days as communicability for 3-5 days after

exposure, and recovery typically occurring within 2-7 days. However, human cases of avian influenza typically have a longer incubation period of 3-5 days. An unusual early feature, which differentiates it from normal human influenza is the presence of eye inflammation. The illness is associated with pneumonia and acute respiratory failure. The case fatality rate may be up to 50%.

If an outbreak occurs in a poultry farm, international guidelines recommend putting a 3 kilometre exclusion zone for poultry movements around the affected location, with a 7 kilometre surveillance zone. A cull of infected poultry is likely to be necessary. The virus can survive in wet poultry manure at 4 degrees for several months, and at 25 degrees for up to 10 days.

As outlined in the January newsletter, the risk of transmission from bird to human is low. Workers involved in a bird cull need to observe a good hand hygiene. They all seem to be provided with proper PPE such as face masks and eye protection. Cull workers should be pre-vaccinated with influenza vaccine, and receive Tamiflu for the duration of the cull plus 10 days afterwards.

Doctors Clodagh Cashman, Peter Noone and Bre Sullivan pictured at the spring scientific meeting

Dr Fiona Donnelly
Specialist Occupational Physician

Dr Fiona Donnelly gave an update on current issues in TB. The current rate of TB in the Irish population is 10.7 cases per 100,000 population. Most of these are in the indigenous Irish population. Pre-employment assessment of at risk healthcare workers involves a TB symptoms questionnaire, Chest X-Ray if they are deemed to be from a country of origin of moderate or high prevalence rate, and ascertaining the presence or absence of a TB scar.

Mantoux skin tests may be performed to ascertain their TB status. The test should be displaced on the middle third of the left forearm, on an area free from scars Skin disinfection is not necessary unless the skin is dirty. The Mantoux reagent is injected using a 26 gauge needle, injecting 0.1 ml of reagent. The bevel on the needle should be facing upwards in line with the flange of the syringe. The reagent is injected intradermally, with the needle advanced approximately 3 mm. The Mantoux skin tests should be read within 48 – 72 hours, with the area of induration measured and not the surrounding erythematous area as well.

New area of concern are the increasing use of immunosuppressant drugs (anti-TNF drugs) for conditions such as Rheumatoid Arthritis and Psoriatic Arthropathy. These drugs can cause a reactivation of latent TB, and should be asked about in pre-employment questionnaires. Use of gamma interferon serology should revolutionise the early detection of a TB exposure case converting to frank TB disease.

Dr William Torreggiani
Consultant Radiologist, Adelaide & Meath Hospital, Tallaght

Dr Torreggiani gave a detailed presentation on the use of MRI in back pain, as well as on new developments in PET CT scanning and CT Coronary Angiography.

In relation to imaging of the spine, X-rays of lumbar spine are of limited value and involve a radiation dose that is 200 times that of the Chest X-Ray. The imaging modality of choice for back pain is MRI, although its usages is limited by cost, and about 5% of people experience claustrophobia.

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MRI reports need careful interpretation, as certain findings can be normal age related degenerative findings that do not represent pathological changes. Dr Torreggiani described the terminology used on MRI radiology reports, and what this means.

Disc degeneration, (also known as dessication or dehydration) is an age related degenerative change that is common in adults over the age of 40 years. It is not a pathological finding, and is not an indication for surgery.

A disc bulge is a normal age related change, and unless there is impingement on nerve routes with matching clinical signs, may not be a significant clinical finding.

Disc protrusion and herniation again need to be matched with the clinical picture to indicate whether they are clinically significant or not.

Disc extrusion and disc sequestration (where the disc detaches completely and passes into the spinal canal) are both significant findings. Spinal stenosis (neural structures impinged by disc material) is significant and can be a neurological emergency.

Dr Torregiani then describes recent developments in Multi Slice CT of the coronary arteries. This may in the future be a replacement for coronary angiograms. It has 80-85 % sensitivity and 90-95 % specificity for significant coronary artery disease.

Doctors Niall Mc Namara, Oghenovo Oghuvbu and Brian Gallagher pictured at the Spring Scientific Meeting

Dr Norman Delanty

Consultant Neurologist, Beaumont Hospital

Dr Delanty gave an update on occupational health issues and epilepsy. Epilepsy is primarily a clinical diagnoses and eye witness reports are important. Investigations may refine the diagnosis, guide treatment and predict future prognosis.

Most people with epilepsy can lead full productive lives and should be assessed for their work suitability on an equal basis with those who do not have epilepsy. In general, absenteeism and accident rates are similar to those without epilepsy. Most individuals with epilepsy are not photo sensitive, and the vast majority have no problem with using computer or VDU screens.

Dr Delanty then went on to describe the issues related around epilepsy and driving. Epilepsy related accidents are believed to constitute only about 0.25% of all accidents. The road traffic regulations from 1999 state that a person who has suffered from epilepsy either currently or in the past cannot be certified to drive commercial vehicles such as trucks and buses. However they may be certified to drive private vehicles such as motorcycles and cars provided they have not had an epileptic attack during the previous 12 months.

Subsequently, these regulations were amended in November 2004. A person with epilepsy can drive cars / motorcycles if they have demonstrated a persistent nocturnal pattern of seizures for the previous 2 years, have only had a single provoked seizure which was more than 6 months previously, or have demonstrated a pattern of simple partial seizures only where full awareness is maintained. Driving cars or motorcycles in these situations needs to be certified by a Consultant Neurologist.

The epilepsy charity Brainwave has an employers information pack that is available on the web site www.epilepsy.ie.

National Pilot of Voluntary Reporting of Occupational Disease in Ireland

Voluntary reporting of occupational disease diagnosed by medical specialists in the UK dates back to the launch of "SWORD" (Surveillance of Work Related and Occupational Lung Disease) by Professor Corbett McDonald about 16 years ago. Other surveillance schemes followed, notably "EPIDERM" which collates reports of occupational skin disease, and "OPRA" (Occupational Physicians Reporting Activity) which deals with any occupational or work related disease recognised by occupational physicians.

In 2002 the schemes were re-launched as "THOR" (The Health and Occupation Reporting Network), which is funded by the UK Health and Safety Executive. THOR incorporates new features such as the option of electronic reporting and of participating in an online forum, and it has spawned various other schemes and initiatives: http://www.coeh.man.ac.uk/thor/

Further THOR developments include a reporting scheme for general practitioners with training in occupational medicine (THOR-GP), and which provides free online Continuing Professional Development for the participants. These schemes have generated a wealth of published information for national Health and Safety Executive (UK) statistics, and in peer reviewed journals – for the benefit of medical specialists as well as the workers / patients they care for.

Following approaches initially from Dr Tom Donnelly and Dr Dan Murphy at the Health and Safety Authority, pilots of EPIDERM and of SWORD in the Republic of Ireland were launched electronically using monthly reporting through an online webform accessed through:

http://www.coeh.man.ac.uk/thor/ireland

Through the collaboration of Dr Johnny Bourke (dermatologist) and Dr James Hayes (respiratory physician) 14 dermatologists and 12 respiratory physicians agreed to participate in the pilot study. Over about the first year 77 cases of occupationally related skin disease (mainly contact dermatitis) were reported, as well as 28 cases of occupationally related respiratory disease (including 13 of occupational asthma, 7 of pneumoconiosis, and 3 mesotheliomas).

When more data has been collected from the Republic of Ireland, it is hoped to prepare a peer reviewed paper including these data as well as data from Northern Ireland which in any case has been collected through the various THOR schemes since their inception.

The possibility of piloting an Irish "OPRA" is being mooted. If pursued, this would probably start as a small scale pilot to determine its viability, possibly limited at first to one sector such as the Health Service. The participating occupational physicians would report cases of occupational or work related disease electronically through a web-based form. In return they would receive regular electronic reports and access to online advice. If you wish to comment about this suggestion please email Dr Peter Noone, noone.p@maile.HSE.ie, and copy to the undersigned care of Ms Ruth Parker <Ruth.Parker@manchester.ac.uk>.

Raymond Agius

Professor of Occupational and Environmental Medicine, University of Manchester M13 9PL

The Prevention of Transmission of Blood-Borne Diseases in the Healthcare Setting (2005)

On March 29th 2006, the Department of Health and Children (DOHC) launched this guideline on its website. A multidisciplinary group has been set up to discuss implementation of the recommendations. However, as it is already departmental policy, it has implications for all of us working in the health services and for all healthcare employers, whether in the public or private sector. For those who require the detail, the guideline may be downloaded from the DOHC website. It is hoped that this summary will suffice for the rest.

The new guideline is preceded by 2 earlier documents, with similar titles published in 1997 and 1999 respectively. Many sections of the new document are not in fact 'new' and can be found in its most recent predecessor. However, key new elements include:

- Specific guidance on thresholds for restriction of certain employees who are infected with hepatitis B and C viruses (HBV, HCV)
- Standards to be applied to the blood testing process
- Specific recommendations on the frequency and content of relevant educational programmes
- A chapter on precautions in haemodialysis units
- Reference to risks from contaminated equipment, and not just infected individuals
- An algorithm for managing healthcare workers (HCWs) infected with blood-borne viruses (BBV)
- A sample form to facilitate the assessment of those who undertake exposure prone procedures (EPPs) at employment.

A risk management approach underpins all of the key recommendations and infection control precautions (Standard Precautions) are elaborated upon in greater detail than in previous documents. The need for access by all to specialist competence in occupational health, microbiology, infectious diseases and infection control is emphasised. Education and training are also high on the agenda, with all potentially at risk HCWs being advised to have such training at induction and annually thereafter. EPPs are defined and guidance is given on how to complete a risk assessment on such employees prior to their employment (see above).

All those at risk (including students) must be immunised against hepatitis B virus or produce evidence of immunity. Those who will perform EPPs must be tested for markers of natural hepatitis B infection (antiHBc, HBsAg) and no offer of employment may be made without compliance with an 'appropriate pre-employment occupational health assessment programme'. Those found to have markers of natural infection with hepatitis B must be tested for 'e' antigen, and those negative for 'e' antigen must have their viral load measured. Hepatitis B surface antigen positive health care workers who are positive for 'e' antigen, or whose viral load exceeds 104 copies/ ml are precluded from undertaking exposure prone procedures. Where an employee with these markers has previously undertaken EPPs, any risk to patients must be assessed. This requires organisations to have a 'look back policy' and to nominate a 'Local Expert Group' which would liaise with the DOHC Standing Advisory Committee in such cases. In addition, immunisation records must be maintained in confidence and should be provided to individual HCWs when required (i.e. change of employment).

Those who will perform EPPs must be tested for hepatitis C markers (anti-HCV). Those who test positive must be tested for HCV RNA. Those who are PCR positive (for viral RNA) are precluded from undertaking EPPs. Initially, this programme of testing is to be targeted at all new entrants to the healthcare system, and not at those already employed within it. The results of this initial programme will be evaluated with a view to extending it to existing EPP workers.

There is no provision for screening of EPP workers for HIV but those who know themselves to be HIV positive are precluded from undertaking EPPs. All HCWs are reminded of their ethical obligation to

seek diagnostic testing if they believe they have been exposed through work or other risk behaviours. The same 'look back policy' recommendations are laid down for hepatitis C and HIV exposures as for hepatitis B.

On commencing employment, all employees should be made aware of the risk factors for acquiring BBV and of their ethical obligation to disclose if they are infected. Employers should facilitate voluntary disclosure of infection status.

Once notified of an infected HCW, the physician must inform the Director of Public Health anonymously so that the appropriate response may be dictated, depending on the previous or ongoing risk to patients. This may require a Local Expert Group to be convened. The organisation's Chief Executive and the affected HCW must be informed of any need for work restrictions.

Every effort must be made to retrain or re-deploy infected health care workers, though the challenges for employers, training bodies and HCWs themselves are duly acknowledged. The guidelines specify that 'appropriate support arrangements should be instituted for infected permanent employees who are unable to work as a result of being infected with a blood-borne pathogen'. The specialist faculties are advised to set up a mentoring system for such clinicians. The medical, nursing and dental schools are also advised to 'take account of national guidance in developing policies for students'.

Special guidelines apply to dialysis and renal transplant settings. The importance of proper and consistent implementation of Standard Precautions (along with patient segregation within this setting) is emphasised, given that the process of haemodialysis requires repeated vascular access for prolonged periods. Pre-treatment vaccination of patients is discussed along with pre-treatment screening and subsequent surveillance for the duration of dialysis treatment. Hepatitis B infected HCWs must not undertake clinical duties in the renal unit. Those infected with HCV and HIV are not specifically precluded from such duties.

In conclusion, previous Irish guidelines on prevention of transmission of blood borne viral infection have now been enhanced but the basics are unchanged with regard to risk management and infection control, which underpin all good clinical practice. Heretofore, healthcare employers would have been guided by health and safety legislation and guidance from other jurisdictions. The recently updated Irish guidelines, when fully implemented, should help to further reduce the risk that these infections currently pose to HCWs and patients.

Dr Blánaid Hayes, FRCPI, FFOM.

Abstracts April 2006

Many health professionals are still not telling insulin treated diabetic patients that they should check their blood glucose before driving. Under the regulations of the United Kingdom's Driver and Vehicle Licensing Agency, insulin dependent diabetic patients must inform the agency of their condition, must test their blood glucose before they drive, and must wait 45 minutes to drive after they have had a hypoglycaemic attack.

But there are about five fatal crashes a year involving hypoglycaemia and 45 serious events a month, according to police notifications to the agency, said Brian Frier, a consultant physician at the Royal Infirmary Edinburgh, adding that this was almost certainly an underestimation. Hypoglycaemia is one of the most common reasons why diabetic patients have their driving licences revoked, Professor Frier told delegates at the Diabetes UK conference in Birmingham recently.

Lisa Hitchen BMJ 2006;332:812

Faking happiness at work can make you ill. Being forced to appear happy at work seems to cause health problems ranging from depression to cardiovascular conditions, ongoing research in Germany has shown. Psychologists working at the University of Frankfurt am Main have been looking at jobs that demand a high level of "fake happiness."

Katy Duke BMJ.2006; 332: 747

Journal Watch

A total of 600 male printing toner workers and 212 control subjects were surveyed in terms of their subjective respiratory symptoms, pulmonary functions, and chest radiographic findings. In addition to the exposure history, the current working conditions and personal exposure levels to toner dust were also examined. Although subjects handling toner for more than 20 years tended to show a higher prevalence of respiratory symptoms and minimal chest *x* ray abnormalities, there was no consistent relation between the exposure to toner dust and the biological responses of the respiratory system.

T Nakadate et al Occupational and Environmental Medicine 2006; 63:244-249

No significant differences in neuropsychological function, behavioural effects or kidney function were found among children whose dental cavities were filled with mercury-containing amalgam compared with children who received mercury-free dental materials.
David Bellinger et al JAMA 295:1775-1783

Abstracts May 2006

Sick building syndrome (SBS) is described as a group of symptoms attributed to the physical environment of specific buildings. Isolating particular environmental features responsible for the symptoms has proved difficult. This study explores the role and significance of the physical and psychosocial work environment in explaining SBS.

A self-report questionnaire was used to capture 10 symptoms of the SBS and psychosocial work stress. In total, 4052 participants aged 42–62 years working in 44 buildings were included in this study.

No significant relation was found between most aspects of the physical work environment and symptom prevalence, adjusted for age, sex, and employment grade. Positive (non-significant) relations were found only with airborne bacteria, inhalable dust, dry bulb temperature, relative humidity, and having some control over the local physical environment. Greater effects were found with features of the psychosocial work environment including high job demands and low support. Only psychosocial work characteristics and control over the physical environment were independently associated with symptoms in the multivariate analysis.

A F Marmot et al Occupational and Environmental Medicine 2006; 63:283-289

Holding down a job outside the home and being a mother in a steady relationship is good for women's long-term health.

Anne Mc Munn et al. Journal of Epidemiology and Community Health, 2006 ; 60:484-489

It is with regret that the Faculty has learned of the death of Dr Donal O'Holohan. Dr O'Holohan acted as regional advisor to the College in Malaysia, where he worked in occupational medicine for many years. He played an important role in facilitating the establishment of the LFOM and MFOM examinations in Malaysia the early 1990's.

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