Abstract

This article on health appraisals at the place of work discusses various work situations, exposures, parameters to be studied and the shortcomings of some of the parameters. Elaborate information is given on many work situations and interpretations of screening tests. Different organ system affections have been dealt with reference to offending chemicals. Practical studies have been cited about the implications of biological monitoring in real-time situations.

Keywords: Health Promotion, Periodic Health Appraisal, Standards, Epidemiological Evaluations, Biological

INTRODUCTION

Health monitoring or health surveillance at work site is an integral component of health promotion (HP).

As per the amendments in 1987 to the Factories Act, more and more vigilance is required to keep track of the health of the employees working in hazardous operations. Health monitoring is the forerunner of all HP activities. In today’s occupational health practice, factory medical officers have the daunting task of promoting the health of employees in industry.

Health promotion concept incorporates programmes of health monitoring of employees exposed to potential hazards, general health screening, hypertension, diabetes control programmes, nutrition surveillance programme, stress management programme, fitness programme, etc.[1]

Irrespective of the type of HP programme, its potential benefits are plenty. Improvement in productivity is achieved by reducing absenteeism, improving morale of employees, improvement in the ability of performance and developing higher quality staff. HP concept establishes the fact that the organisation has concern for the health and welfare of its employees.[5]

The supervision of the health of workers is specifically carried out by means of medical check-up. This check-up varies according to whether it is a preemployment medical examination, a periodic medical examination or a special check-up following long periods of illness or injury. Such periodic tests have become particularly important today because these tests help us to diagnose the earliest deviations in health and permit prevention of illness.

Chronic diseases such as hypertension, diabetes can be detected at an early stage. Thus, occupational health service is able to supervise an important sector of the population but the supervision takes place on the spot, thus making it possible to protect and improve workers health without incurring loss of time or absenteeism which would be the case if they had to go to health centres for that purpose.[5]

Cost-benefit studies are often employed to establish the success of HP programmes in developed countries. In countries like India, these examinations will continue to be in force till we achieve saturation point. Blunderbuss screening must be stopped and specific monitoring tests are to be employed.

We shall see briefly the latest concepts in health monitoring of certain occupational diseases.

Health monitoring of occupational diseases[4]

Despite the enormous progress that has been made in developed countries, continuing vigilance is required not only to maintain the effective control of established hazards but also to rapidly detect the emergence of new or hitherto unsuspected disorders that
might appear as a consequence of changing technology or work practices.

**DISCUSSION**

The above mentioned work exposures and the parameters to be studied have been found to be very empirical since the diagnosis of occupational diseases is more complex and it involves a meticulously taken occupational history, onset of symptoms, coexisting clinical symptoms and diseases, personal lifestyles like smoking, abuse of alcohol etc., observation of an epidemiological cluster of cases (may or may not be present) and comparability with the prevailing and past environmental parameters (suspected exposures).\(^{[1]}\)

In one of the studies, done by our centre over a period of 25 years, it has been found that in the beginning of the study (25 years ago) of lead smelting areas of a work centre in South India, the environmental scene was very bad with high level of lead and other pollutants.\(^{[4]}\) These lead smelters [Figure 1] have been subjected to health appraisals annually for the past 25 years and it is gratifying to note that not even a single case of lead toxicity has been observed in the last 25 years. This is largely due to the fact that more modernisation of processes has taken place and periodic appraisals have produced a sort of awakening in the employees that they have to follow suitable protective devices at the place of work.

Similarly for lung function assessments, we are often guided by the standards of different authors from other countries and it is essential that we build our own standards from our ethnic population by conducting these tests in our normal population, viz. Apprentices (young people) and by constructing nomograms using regression equations and this will be comparable.

In a study of electroplaters in an engineering industry, we have observed that the biological monitoring for urinary chromium and urinary nickel (it is mandatory under factory rules) have not shown any abnormal results. It is prudent to know that there is very rarely an association between urinary excretion of chromium and clinical abnormalities.\(^{[5]}\)

With reference to the neuro behaviour core battery for persons exposed to toxic chemicals, it is essential that we have indigenous standards of normal population, which would

<table>
<thead>
<tr>
<th>Occupational diseases</th>
<th>Recognised occupational factors</th>
<th>Health monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Occupational cardio-vascular diseases</td>
<td>Physical activity, CS2, dynamite, solvents, aerosol propellants, stress, type A behaviour hypertension and cardio myopathy</td>
<td>1. Known CHD cases to be excluded from exposure to these</td>
</tr>
<tr>
<td>2. Occupational reproductive system disorders</td>
<td>Lead, organic mercury, polychlorinated biphenyls, chlordecone dibromo-chloropropane, ionising radiation, anaesthetic gases, cytotoxic drugs, VCM, dioxin, ethylene oxide.</td>
<td>2. Biological monitoring</td>
</tr>
<tr>
<td>3. Occupational lung diseases</td>
<td>Fibrogenic dusts, manmade mineral fibres</td>
<td>3. Regular CHD screening</td>
</tr>
<tr>
<td>4. Occupational cancers of respiratory system</td>
<td>Arsenic, hexavalent Cr, Asbestos, wood dusts, nickel, isopropyl alcohol</td>
<td>1. Conception to be advised against (while exposed)</td>
</tr>
<tr>
<td>5. Occupational liver diseases</td>
<td>Polychlorinated dibenzofurans, dibenzodioxins, hexachlorobenzene, methylenediamine, and VCM</td>
<td>2. Reproductive age group to be cautioned</td>
</tr>
<tr>
<td>7. Occupational kidney disorders</td>
<td>Lead, mercury, cadmium, gold, thallium, uranium, arsenic, benzidine, betanaphthylamine</td>
<td>Standardised respiratory questionnaire, lung function evaluation, X-ray chest, chest physician collaboration, allergy tests.</td>
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</tbody>
</table>

**Figure 1: A lead smelter**

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enable us to draw meaningful conclusions.

The approach of the occupational physician differs in many important respects from that employed by physicians in other fields, for example knowledge of epidemiology and occupational hygiene principles, industrial relations and legislation are required.[6]

Very often judgements have to be made in the face of inadequate scientific information being available on risk, given the vast array of other poorly known hazards to be found in modern work places. Health monitoring alone is not sufficient for HP and a judicious work monitoring is essential and in conjunction with health monitoring is an ideal way of keeping workers healthy.[2]

Occupationally related illnesses are common and seem to be increasing in prevalence and will come to occupy more of the occupational health practitioner’s time.

Periodicity of health monitoring of occupational diseases will vary depending on the hazardous nature of the pollutant and with efficient clinical data base, one arrives at the periodicity by closely following the events of morbidity over a period of time. Health monitoring for chronic diseases such as hypertension, diabetes, etc., will depend upon the prevalence studies done in the industry from time to time.[7]

In developing countries, where lack of awareness, malnutrition, communicable diseases are widely seen, it is prudent that HP programmes at work site should be comprehensive and complete and should encompass all aspects of workers’ health including occupational health.

REFERENCES

ANNOUNCEMENT

Post-Graduate Certificate Course in Industrial Health for Medical Doctors 2005-2006

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