OCCUPATIONAL BRUCELLOSIS IN A PREGNANT LABORATORY WORKER: A CASE REPORT

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Brucellosis is not commonly notified as an occupational disease in Malaysia. This could be due to the prevalence of brucellosis which is still low in this region. This report describes about a 20 week pregnant laboratory worker who was exposed to a confirmed brucella positive blood smear and developed brucellosis. The worker did not develop any symptoms initially and was not started on any prophylaxis. However her first blood serology for brucella was positive and during that time, the worker developed premature contraction and was admitted for tocolysis. The same test which was conducted two weeks later showed the similar positive result. Eventually she was started on Tablet Bacitracin twice daily for three weeks. Currently she is fine. Workplace investigation revealed that the patient’s blood culture was handled in an open bench and the recommended practice was not followed.

A SIMPLE METHOD TO DETERMINE THE CUMULATIVE DOSE IN OUTDOOR WORKERS EXPOSED TO SOLAR RADIATION

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Introduction Solar radiation may have adverse effects, both acute and long-term, on skin and eyes, mainly due to the UV component. Outdoor workers are significantly exposed to solar UV radiation, but exposure is highly variable, depending on environmental, occupational and personal features. Outdoor workers’ exposure to Solar Radiation (SR) is still an underestimated risk factor in several countries, particularly in Italy, even if it has been included for years in the carcinogenic for humans by (IARC). The scarce attention paid by employers to this risk imports as an insufficient prevention, as well as a difficulty in recognising in retrospect the causal relation between the long time exposure of workers and the eventual skin cancer; in particular, this can happen when the melanoma occurs in body districts which were less exposed to direct SR. Individual exposure may be measured by using personal dosimeters, but presently operative concerns may limit or even prevent their usage in a lot of cases. Several indirect methods to assess UV exposure of outdoor workers have been proposed, with no general agreement. Also, there may be need to assess lifetime cumulative exposure of an individual worker for both epidemiological and legal purposes. This work describes a method for reconstructing the annual exposure dose starting from the data obtained by a questionnaire filled by the worker.

Methods An algorithm has been developed for reconstructing the annual exposure dose of SR related to the worker. The mean radiant exposure of one month in a selected place was derived from satellite data (TEMIS-ESA) and the mean global irradiance on the same period was provided by ENEA on the basis of measured data; both data consider the cloudy coverage and the ozone column, and the satellite data are the mean of five years. The ratio of these two values gives a coefficient for estimating the mean erythemal dose of one month on the horizontal plane; successive corrections relative to the number of working hours and day, clothing, albedo and position of the body district exposed were applied.

Results First validation tests demonstrated that the algorithm estimates the mean daily erythemal dose with an optimal approximation respect to the values deriving from on field measurement campaign. Successive validation test will be...
carried out with extensive measurements involving workers of specific sectors (fishing, farming, quarry).

Conclusion The developed algorithm is an instrument useful for determining the cumulative UV erythematous dose of workers with the best possible level of approximation, since it was obtained on the basis of the previous working exposure derived from a questionnaire filled by the worker itself. The algorithm can be also used as prevention instrument for the previous evaluation of the occupational risk.

Introduction Operating room (OR) staff are exposed to surgical smoke on a daily basis. With the increased use of intraoperative smoke-generating devices, this is a significant occupational health hazard.

Methods A database search was performed for literature on surgical smoke from 1980–2017.

Results Electro-, laser and ultrasonic surgical techniques produce surgical smoke. 95% of surgical smoke is water and 5% is a combination of chemicals and cellular debris. Up to eighty chemicals, including the carcinogen Benzene, have been identified. The chemical load from cautery of one gram of tissue is comparable to that derived from six cigarettes. HIV and HPV viral DNA have been isolated, and both Staphylococcus and Neisseria cultured from surgical smoke. At less than ten micrograms in diameter, surgical smoke particles can remain airborne and are inhalable; the smallest fractions entering the alveoli. Smoke particles diffuse along concentration gradients within the OR atmosphere exposing all staff, and not just the operator or those scrubbed. Animal studies have demonstrated pulmonary congestion, interstitial pneumonia and emphysema secondary to surgical smoke exposure. Associated symptoms reported by staff include headache, problematic lacrimation and cough – affecting 58%, 42% and 20% of doctors respectively in one survey. An association with cancer has been made through case series. Standard surgical facemasks offer no protection; whilst portable evacuation devices are the best risk reduction measure. No legislation currently exists in the United Kingdom, but many international organisations offer guidance on minimising surgical smoke exposure in the workplace.

Conclusion OR staff training ad policies should align with the latest guidance so that appropriate risk reduction measures can be put in place to protect health.