

# 1101 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 Bactrim 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.

# 1194 BIOMONITORING OF HEALTH CARE PERSONNEL INVOLVED IN THE PREPARATION AND ADMINISTRATION OF ANTICANCER DRUGS IN THREE ITALIAN HOSPITALS

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**Introduction** Most of anticancer drugs has in common DNA-damaging properties, therefore health care personnel who handle such drugs is at risk for adverse health effects. We aimed to evaluate exposure and its genotoxic and cytotoxic effects in technicians and nurses who prepare and administer anticancer drugs in oncology units of different hospitals.

**Methods** In the hospitals (A,B,C) we studied 17 pharmacy technicians/nurses who prepare anticancer drugs, 25 nurses who administer them and 53 controls. Workplace monitoring of 5-fluorouracil (5FU) and gemcitabine (GEM) was performed by HPLC-UV on wipes/swabs collected in areas of pharmacy and administering wards. Personal exposure to 5FU and GEM was monitored by pads. We measured urinary metabolite  $\alpha$ -fluoro- $\beta$ -alanine by LC-MS-MS. We calculated total amount of handled drugs. Buccal micronucleus cytome (BMCyt) assay was used to evaluate DNA damage (micronuclei MN and nuclear buds NB), cytotoxic defects (binucleated cells BN) and cell death (as condensed chromatin CC).

**Results** Drug contamination was found only in the 30% of wipe/swab samples, with GEM more frequently present than 5FU. Contamination didn't show significant difference among the hospitals. Only GEM deposition was found on workers' pads (93% of samples). No  $\alpha$ -fluoro- $\beta$ -alanine was found. Total amount of prepared drugs was similar in A and B and higher than C. B prepared drugs only manually while in A they were prepared automatically/manually. In A and B we

found in workers who prepare drugs, higher genotoxicity than respective controls. Total amounts of administered drugs were in A>B>C. Nurses who administer drugs showed higher genotoxic (%MN) and cytotoxic (%CC) effects than controls in A and C.

**Conclusion** These findings show that total amount of prepared drugs correlate with higher genotoxicity found in A and B. We also demonstrate the suitability of BMCyt assay as sensitive and no invasive biomarker of early effect for occupational antineoplastic exposure.

# 1334 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 eye, 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 erythral 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 erythral dose with an optimal approximation respect to the values deriving from on field measurement campaign. Successive validation test will be