

HEALTH SCIENCES

77. EFFICACY AND SAFETY OF SUCRALFATE ENEMA IN THE PREVENTION OF RADIATION PROCTITIS

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Radiotherapy has extended the lives of patients with malignancy. However, this often results in complications including radiation proctitis which may lead to strictures and recurrent bleeding. The study aimed to determine the efficacy and safety of sucralfate enema in preventing radiation proctitis. Twenty-four patients who underwent abdominal radiotherapy at the Philippine General Hospital were randomized to receive either 10% sucralfate enema (Treatment group: n = 12) or placebo (Control group: n = 12) during the course of radiotherapy. Patients were followed up every two weeks until two months after the end of therapy then every month for four more months. Proctosigmoidoscopy is done at the end of radiotherapy, one, two, and six months after. Failure of prophylaxis was defined as the development of radiation proctitis based on clinical, endoscopic and histologic criteria. Adverse drug effects were monitored. Two patients in the control group were lost to follow up. Two out of twelve patients in the treatment group and four out of ten patients in the control group developed radiation proctitis. Diarrhea with no other evidence of radiation proctitis was observed in one patient in the treatment group. This study showed trend toward a decrease in the incidence of radiation proctitis with sucralfate enema.

Key words: radiation, proctitis, sucralfate, randomized controlled trial, prophylaxis, proctosigmoidoscopy, radiotherapy complications, enema

79. MUTAGEN-INDUCED CHROMOSOME LESIONS: FINDINGS AMONG FILIPINO JEEPNEY DRIVERS

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Drivers of public utility vehicles particularly jeepneys which are not air-conditioned are constantly exposed to the hazards of pollution. In this study, jeepney drivers were chosen to provide initial data on the possible effects of this exposure on the sensitivity of chromosomes. Thirty-five (35) Filipino jeepney drivers were chosen to participate in this study. Peripheral blood samples were collected and cultured following the routine 72-hour microculture technique. Five hours before harvest, the cells were exposed to bleomycin, a radiomimetic agent. Mutagen-induced chromosome lesions indicate the responses of the cells to the clastogenic effects of mutagen. These effects are measured in terms of the average number of chromatid lesions or breaks per cell (b/c). The mean b/c in the drivers group is 1.46 while that of the control group is 0.75. Results also show that 77.14% of the drivers showed a b/c value higher than 1.0, which is established as the borderline for mutagen sensitivity. In the control group, only 22.8% have a b/c value higher than 1.0. Since sensitivity to mutagens is an indirect measure of DNA repair capacity, results of this study indicate that drivers of jeepneys may have a high risk of acquiring environment-induced cancer.

Key words: mutagen, chromosome, bleomycin, pollution, DNA repair capacity, chromatid breaks, jeepney drivers

80. CHARACTERIZATION OF RIFAMPICIN RESISTANCE IN PHILIPPINE ISOLATE OF MYCOBACTERIUM TUBERCULOSIS UTILIZING THE RNA POLYMERASE B GENE

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Rifampicin resistant isolates of *Mycobacterium tuberculosis* in the Philippines were characterized using the *rpoB* gene (RNA polymerase gene). A total of 47 isolates were analyzed using polymerase chain reaction and DNA sequencing. Majority of the Rifampicin resistant isolates of *Mycobacterium tuberculosis* in the Philippines showed point mutations in the *rpoB* gene (RNA Polymerase B gene). Majority of the point mutations were in positions 526 (39.5%) and 531 (34.9%) and most of these involved single nucleotide substitutions. Most of the point mutations associated with Rifampicin resistance were seen in the isolates from the National Capital Region (NCR) whereas majority of the Rifampicin resistant isolates without point mutations were seen in Laguna or areas outside of the NCR. This information may be used in subsequent studies for determining patterns of drug resistance as well as monitoring changing virulence and drug susceptibility of *Mycobacterium tuberculosis* that may impact on health policies related to tuberculosis control.

Key words: *Mycobacterium tuberculosis*, RNA polymerase gene, point mutation, Nucleotide substitution

81. FREQUENCY OF GLUCOSE-6-PHOSPHATE DEHYDROGENASE DEFICIENCY MUTATIONS AMONG FILIPINO NEWBORNS DETECTED BY NEWBORN SCREENING

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A newborn screening pilot study on glucose-6-phosphate dehydrogenase (G6PD) deficiency was conducted among Filipino newborns using the Formazan method on dried blood spots. Results revealed a G6PD deficiency incidence of 3.6% among newborns screened. A red cell based quantitative enzyme assay was used to confirm screen positive cases for G6PD deficiency. Among the confirmed G6PD deficient cases, multiplex polymerase chain reaction (PCR) using multiple tandem forward primers and a common reverse primer (MPTP) was used to detect for previously reported common mutations in exons 5, 9, 11 and 12 of the G6PD gene. The DNA of 200 Filipino newborns with G6PD deficiency were analyzed and results showed 169 or 84.5% had detectable mutations while in 31 or 15.5% of the samples, no mutations in exons 5, 9, 11 and 12 could be detected. The most common mutations was the G to A transition on nucleotide 871 (Viang Chang) of exon 9 in combination with a silent mutation on exon 11 accounting for 33.7% of the cases. This was followed by the C to T transition on nucleotide 1360 (Union) in 21.3% and silent mutations on nucleotide 1311 in 15.4% of cases both mutations were found on exon 11. Other mutations include 383 T → C (Vanua Lava) in 10%, 1003 G → A (Chatam) in present 9.5% and 1376 G → T (Canton) in 3.6% of the newborns. There were combinations of these mutations present in a minority of cases. Results of this study show the molecular heterogeneity underlying G6PD deficiency among Filipino newborns.

Key words: G6PD deficiency, Formazan method, multiplex PCR, MPTP

82. USE OF CHROMATOGRAPHIC TECHNIQUES FOR THE DETECTION OF MARIJUANA IN URINE SAMPLES

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Marijuana, a hallucinogen, is one of the most commonly used dangerous drugs in the Philippines. The major psychoactive component is tetrahydrocannabinol, which could be monitored in urine. Different chromatographic techniques (Thin Layer Chromatography, High Performance Liquid Chromatography and Gas Chromatography-Mass Spectrometry) were developed to detect marijuana in urine samples. After collection, the urine sample was prepared by basic hydrolysis and the drug was extracted using liquid-liquid extraction. Different fractions were utilized for TLC, HPLC and GC-MS analysis. In the TLC method, R_f of marijuana was found at ~0.68 and limit of detection at 60 ng/ml. Marijuana was detected at 215 nm, in the HPLC method, with a retention time of ~12.0 min. Prior to GC-MS analysis, the marijuana extract was changed to its trimethylsilyl derivative. Electron impact was used as the ionization mode. Selected ion monitoring (SIM) was used to confirm the presence of the parent metabolite of marijuana, 9-Carboxy-11-nor- Δ^9 -tetrahydrocannabinoid, by monitoring the diagnostic ions 371, 473, 488. The retention time was found at ~11.9 min and a cut-off level of 60 ng/ml were used to confirm positive urine samples.

The method developed is used for routine hospital screening and confirmation of marijuana in urine.

Key words: marijuana, hallucinogen, chromatography, TLC, HPLC, GC-MS, dangerous drugs, urine, tetrahydrocannabinol

