

oral mucosa makes the patients more vulnerable to local secondary infections which in turn many aggravate mucositis and systemic infection. The granulocyte macrophage colony stimulating factor has a pleiotropic activity that influences not only proliferation and differentiation of stem cell but also regulates several other cells involved in acute and chronic inflammation and immune responses. This retrospective study was aimed to evaluate the effects of topical rhGM-CSF administration on oral mucositis in cancer patients during or after chemotherapy and radiotherapy. Forty six cancer patients on rhGM-CSF gargle were included for this study who received chemotherapy and/ or radiotherapy. rhGM-CSF in 300ml of normal saline was used for gargling 4 times a day until mucositis grade improved to 0 grade which is functionally normal. Oral mucositis grade and duration were evaluated in related to radiation therapy, infection, use of systemic rhG-CSF, neutropenia, chemotherapy (including 5-FU or not) and nutrition supplement. Total 46 patients were included in this study, mean age 54.5 ± 12.2 years and mean weight 60.7 ± 10.6 Kg. The mean mucositis grade was 2.24 ± 0.69 , and mean duration was 7.6 ± 4.2 days. There was a significant difference in the grading in mucositis severity between infection and radiotherapy ($p=0.014$ and $p=0.015$). But there was no statistically significant differences related to the entire groups. The cost of rhGM-CSF gargling is at least 16 times expensive than any other gargles. rhGM-CSF gargle seems to be effective in healing oral mucositis during and or after chemotherapy or radiation, and application of rhGM-CSF seems to lower the degree of oral mucositis. Although the rhGM-CSF seems to be effective in the control of oral mucositis, it is more expensive than any other gargles. Prospective randomized, double blind studies will be necessary for deciding appropriate effects.

Poster Presentations – Field A3. Hygienics

[PA3-1] [10/18/2001 (Thr) 14:00 – 17:00 / Hall D]

Quantitative analysis of sildenafil from the smuggled Viagra

Lim MiAe^o, Lee JuSeon, Choi HyeYoung, Eo SangHeui, Lee HanSun

Drug-Toxicology div., Forensic Science Dept., National Institute of Scientific Investigation

Sildenafil, an oral therapy for erectile dysfunction is sold by the name of Viagra. But it has a potential for cardiac risk of sexual activity in patients with preexisting cardiovascular disease. Therefore, sildenafil citrate should not be generally used in men for whom sexual activity is inadvisable because of their underlying cardiovascular status. Namely Viagra is a prescription medication available only from doctors. There was an expectation that Viagra would be sold in great deal, but the market is really low in Korea because its use needed the diagnosis on the erectile dysfunction and doctor's prescription. On the other hand, as its known effects on erectile dysfunction, there have been many smuggled drugs from China which contain sildenafil such as the formation of tablets, capsules and alcoholic drinks. In the case of capsule, it was written in the package that capsules contained terrapin powder or prickly ant as a main component. We couldn't know they had really such components but they had sildenafil with the range of 7.2–59.7mg per capsule. As the counterfeit tablets, they looked after genuine ones in their outward appearance but sildenafil contents was less than written contents (100mg) with the range of 34.6–83.6mg per tablet. We analyzed sildenafil with HPLC/PDA. An isocratic mobile phase was 0.05M triethylamine phosphate (pH 3.0):methanol:acetonitrile=580:250:170. The column (4.6X250mm I.D.) was packed with 5 μ m XTerra RP18 (Waters, U.S.A.). The detector was set at 290nm wavelength. Flow rate was 1ml/min.

[PA3-2] [10/18/2001 (Thr) 14:00 – 17:00 / Hall D]

Effect of Cadmium on mitochondrial function in vascular endothelial cells

Park Eun Kyung ^o, Jung Yi-Sook, Lee Soo Hwan, Baik Eun Joo, Moon Chang-Kiu, Moon Chang-Hyun

Department of Physiology, School of medicine, Ajou Univ, College of pharmacology, Seoul National Univ

Cadmium is heavy metals that cause vascular lesions such as arteriosclerosis and hypertension. However, less information is available concerning for its toxicity. The results from previous in vitro and in vivo studies demonstrate that cadmium cation can induce an oxidative stress in various tissues. Oxidative stress has been shown to be involved in the mutagenicity and apoptosis of mammalian cells treated with cadmium.

In this study, we investigated whether cadmium cause cell death in vascular endothelial cells. We also examined the effect of cadmium on mitochondrial function by MTT assay. Cell death was quantitatively determined by measuring lactate dehydrogenase (LDH) activity, propidium iodide(PI)-uptake and by observing morphology in CPAE cells.

In CPAE, a significant decrease was observed in mitochondrial function 24, 36 hours after the treatment with 10-100µM CdCl₂. Cadmium-induced cell injury was also observed morphologically by microscope. We also observed cadmium induced increase in PI-uptake.

In conclusion, our results suggest that cadmium can cause mitochondrial dysfunction and subsequent cell death in vascular endothelial cells.

[PA3-3] [10/18/2001 (Thr) 14:00 - 17:00 / Hall D]

Cardiotoxic effect of carbofuran in rat.

Jung Yi-Sook, Lee Soo Hwan, Baik Eun Joo, Moon Chang-Kiu, Moon Chang-Hyun

아주대학교 의과대학, 서울대학교 약학대학

Of all pesticides, carbamates are known to be most common, since alternatives such as organophosphates have long lifetime and are extremely toxic to produce a delayed neurotoxic effect. Among the available carbamates, carbofuran is the most widely used one in agriculture and forestry as a broad-spectrum systemic insecticide. Although a number of studies about toxicity of carbofuran have been reported, its cardiovascular toxicity has not yet been studied.

In the present study, we investigated its cardiovascular toxic effect in isolated Langendorff rat heart and in anesthetized rat in vivo. Isolated rat heart, carbofuran (10µM) caused a significant depression in the left ventricular developed pressure (LVDP), indicating contractile dysfunction by carbofuran. Carbofuran (10µM) also decreased coronary flow rate (CFR) in isolated heart, indicating carbofuran-induced coronary dysfunction. In anesthetized rat model, carbofuran (10 mg/kg) significantly reduced blood pressure and heart rate, and altered ventricular component of electrocardiogram. These results suggest that carbofuran can cause cardiac dysfunction in rat in vivo and vitro.

[PA3-4] [10/18/2001 (Thr) 14:00 - 17:00 / Hall D]

A Cancer Risk Assessment of Di(2-ethylhexyl)phthalate in Powdered Milk for Infant Exposure

Choi Shinai, Kang YounSeok, Nah TaeHwa, Oh ChangHwan, Park Jongsei

KSBC Bldg, #Mt. 111-8, Iui-dong, Paldal-ku, Suwon, Kyonggi-do, Korea, 442-270 LabFrontier, Co. Ltd

The United States Environmental Protection Agency(EPA) characterized the cancer hazard of di(2-ethylhexyl)phthalate(DEHP) as a B2 group(probable human carcinogen) and proposed "Guidelines for Carcinogen Risk Assessment". This guidelines proposed alternative methods for analyzing carcinogen