SDS after treatment of rHGh and history of adverse effect. In addition, the patient information such as chronological and bone age in beginning of treatment and history of disease were collected. Patients were divided into 3 groups, which were idiopathic growth hormone deficiency, organic growth hormone deficiency and Turner syndrome.
Total 51 patients were included for evaluation and 20 were idiopathic growth hormone deficiency, 13 organic growth hormone deficiency and 18 Turner syndrome. The mean age of treatment start is 8.55 year-old and the mean time of treatment was 25.11 months. In height SDS and weight SDS, all patients showed increases significantly by 48 months. Growth velocity increased by 18 months and it was lager than mean velocity SDS of normal age group.
The efficacy of rHGh was affected by age of treatment start and the lower chronological age of treatment start was more effective significantly.
The adverse effects were transient except the overweight, and did not cause to discontinue, to reduce dosage of rHGh and compliance.
In conclusion, rHGh helped children with growth hormone deficiency or Turner syndrome to grow without significant side effects.

[PA2-3] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

Effective Control of Intractable Hypercalcemia by Regular Dose of Pamidronate in Dialysis Patients

Byon Wonkyung°, Rheu YoonMee, Kim JiYoung, Kim KuiSook, Suh OkKyung, Son InJa, Shin WanGyoon, Ahn Curie

Graduate School, Seoul National University

Intractable hypercalcemia is frequently observed in long-term dialysis patients and may cause serious complications. However, except for using low calcium containing dialysate, there are only a few methods available to control complications. Pamidronate has been known to be effective for the treatment of acute hypercalcemia due to a variety of causes. But its efficacy has not been evaluated on long-term bases. We prospectively studied the efficacy, safety and adverse drug reaction of oral pamidronate for the treatment of intractable hypercalcemia. Five patients under dialysis (1 HD and 4 PD) were prospectively analyzed. These patients had hypercalcemia (>11 mg/dl) unresponsive to low Ca-containing dialysate for more than 3 months. Four patients received oral pamidronate 100 mg 3 times a week and 1 patient 100 mg for 10 consecutive days of each month for 12 weeks. PTH, osteocalcin levels and DEXA tests were performed every 3 months. In one patient with bone biopsy-proven secondary hyperparathyroidism, the serum calcium level dropped from 12.3 to 9.4 mg/dl. In other four patients, the serum calcium levels were lowered to below 11 mg/dl despite concurrent administration of oral calcium acetate as a phosphate binder. The mean serum calcium level dropped from 11.74 mg/dl to 10.44 mg/dl ($p=0.03$). The changes in serum phosphate levels were not consistent. The PTH concentrations were significantly elevated in 2 patients whose levels were higher than 200 pg/ml at the start of the treatment. The DEXA showed that their bone masses were not reduced during the observation period. No significant adverse drug reactions were noted and the frequency or duration of dialysis did not require any adjustment during this period. We concluded that oral pamidronate could be used to control intractable hypercalcemia on long-term bases without causing serious adverse drug reactions.

Poster Presentations - Field A3. Hygienics

[PA3-1] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

Post-mortem Determination of Sildenafil in Blood

Lee Juseon°, Lim Mieae, Eo sangheui, Choi Hyeyoung, Lee Hansun, Park yoosin

Dept. of Forensic Science, National Institute of Scientific Investigation

Sildenafil, an oral therapy for erectile dysfunction is sold by the name of ViagraTM. 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. There was a case of death related with sildenafil. He was dead shortly after sexual intercourse. He was the director of Taekwondo and 61 years old. He was-supposed to have been taken drugs related with hypertension and thrombotic disease because he had some of terazocin and aspirin. he also had 2 tablets of Viagra among 4 tablets packing. It was deduced that he ate 2 tablets of Viagra. Each tablet of Viagra has 100 mg of sildenafil. We analyzed sildenafil with HPLC/PDA detector from post-mortem blood. There wasn't any other drugs in blood except sildenafil but aspirin was also detected in gastric juice. Sildenafil concentration in blood was 0.3㎍/㎖.

[PA3-2] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

Report on the Modified Sildenafil

Lim Mieae°, Lee Juseon, Choi Hyeyoung, Eo Sangheui, Lee Hansun, Park Yoosin

Div. of Drug & Toxicoiogy, Dept. of Forensic Science, National Institute of Scientific Investigation

Sildenafil ((1-[4-ethoxy-3-(6,7-dihydro-1-methyl-7-oxo-3-propyl-1H-pyrazolo-[4,3-d] pyrimidin-5yl) phenylsulphonyl]-4-methylpiperazine) is an oral therapy used for male erectile dysfunction(MED). Despite the efficacy of sildenafil as treatment for MED, there are some notable drawbacks in patients with preexisting cardiovascular disease. Therefore. sildenafil citrate (Viagra^{TM}) is a prescription medication available only from doctors and should be done with caution. As Its effects on MED have been known, many counterfeits which contain sildenafil have been dealed in illegally such as the formulation of tablets, capsules and drinks. We analyzed counterfeit sildenafil with HPLC/PDA. Almost all counterfeits had sildenafil, but some sample such as a capsule, a decoction and liquid raw materials, contained modified sildenafil that had some different retention time in HPLC. This substance showed a molecular ion peak at 14 mass unit higher than that of sildenafil in LC/MS-analysis. Through NMR, we confirmed the detail structure as methylated sildenafil analogue on piperazine ring. We don't know whether this substance has sildenafil-like effects on MED, so its activity assay must be done.

[PA3-3] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

A Novel Antithrombotic Agent, NQ304 Inhibits the Proliferation of Vascular Smooth Muscle Cells

Kim Jinho°, Kim TackJoong, Ryu ChungKyu*, Hong JinTae, Yun YeoPyo

College of Pharmacy, Chungbuk National University, Cheongju, Korea,*College of Pharmacy, Ewha Womans University, Seoul, Korea

Several 1,4-naphthoquinone derivatives have been reported to possess many pharmacological effects such as anti-viral, anti-fungal, anti-cancer and anti-platelet activities. However, little has been known about functional role in vascular smooth muscle cells (VSMCs). Among the synthetic 1,4-naphthoquinone derivatives, we found that 2-chloro-3-(4-hexylphenyl)-amino-1,4-naphthoquinone (NQ304) is a potent growth inhibitor on VSMCs. In this study, a possible anti-proliferative mechanism of NQ304 on rat aortic VSMCs was investigated. NQ304 (1-10 μM) significantly inhibited 5% fetal bovine serum (FBS)-induced proliferation of rat aortic VSMCs evaluated by direct counting of cell number and [^{3}H]-thymidine incorporation assay. There was no evidence of cellular toxicity or apoptosis of NQ304 (10 μM) as determined by trypan blue exclusion assay, flow cytometric analysis and DNA fragmentation assay. The intracellular signaling effect of NQ304 on the FBS-induced activation of extracellular signal-regulated kinase 1/2 (ERK 1/2) and Akt cascade by western blot and electrophoretic mobility shift assay (EMSA) in cultured VSMCs were also examined. Pre-treatment of VSMCs with NQ304 resulted in a significant inhibition of the FBS-induced phosphorylation of ERK1/2 and Akt kinase. These results indicate that NQ304 may inhibits vascular smooth muscle cell proliferation through blocking of ERK 1/2 and Akt cascade.

[PA3-4] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]