

523 Effect of catecholestrogens on survival rate, lipid peroxide levels, and hematopoietic function of mice after ^{60}Co γ -irradiation. A.Tomatsu, Y.Nakagawa*, M.Suzuki, M.Noguchi, M.Nakanishi, K.Yoshino**, S.Komura**, K.Yagi**, Dept.Obst.and Gynec.,Aichi Med.Univ.,Aichi,*Sakashita Hosp., Gifu,**Institute of Applied Biochemistry,Gifu.

We previously reported that catecholesterogen, a metabolite of estrogen, has an antioxidant activity. Since it is known that lipid peroxides are generated by radiation and cause deleterious effects on organs and tissues, it is probable that catecholesterogen would have a protective effect against radiation injury. The present study was undertaken to elucidate this problem with γ -ray irradiated mice.

When 10-week-old male BALB/c mice received whole-body irradiation with a single dose of 8 Gy ^{60}Co γ -rays and 2-hydroxyestradiol (2-OHE₂) was injected 3 hours before and after the irradiation, 30-day survival rate of the mice after the irradiation was 70%, while that of control mice was only 5%. Upon the irradiation with 10 Gy, lipid peroxide levels in the serum and liver of mice increased markedly. These increases in the levels were significantly suppressed by the administration of 2-OHE₂. 2-OHE₂ enhanced the recovery from leucopenia in mice after irradiation. These results indicate that 2-OHE₂ is effective in preventing radiation injury.

524 Studies of the effects of energy metabolism of human muscle following activity. T. Iguchi, S. Tsunoda, M. Shioda, K. Murai, Y. Takeda. Dept. Obst. and Gynec., Tokyo Women's Med. College.

We used phosphorus magnetic resonance spectroscopy (^{31}P MRS) to measure metabolism of the forearm muscle at rest and during recovery from exercise in old normal and young normal subjects. At rest, the ratio of pi/pcr increased with age. While the ratio of Pcr/TP decreased. With the stress of acute exercise, forearm muscle in the high Arteriosclerosis Index (AI) had a reduced rate of Pcr recovery. We conclude that ^{31}P MRS is a safe, acceptable technique with which to study muscle metabolism in high AI subjects. In forearm muscle we found an age related decrease in high energy stores (pcr) at rest and a reduced rate of recovery in the high AI subjects.

525 Treatment of anemia in pregnancy with Hb levels ranging from 10.0 to 10.9g/dl. M.Yata, Y.Iizuka, T.Tode, Dept.Obstet.and Gynec., Shimizu Kousei Hospital, Shizuoka.

This study was designed to investigate whether iron preparations are necessary for anemia of pregnancy in which Hb level is 10.0 to 10.9g/dl. One hundred patients with Hb levels in the above range and at 28 to 30 weeks of pregnancy were divided into two groups, an Fe group in which 50 patients were given iron preparations (Ferrous Fumarate, Fe^{2+} 100mg/day \times 28 days) and a non-Fe group of 50 untreated patients. If the Hb level was less than 9.9g/dl after 36 weeks, iron was given and the patient was excluded from the study.

At 36 weeks, Hb, serum iron and serum ferritin levels in the Fe group were significantly higher than in the non-Fe group ($p<0.001$, 0.01, 0.001, respectively). No significant difference in the weight of newborns, Apgar score, or weight of the placenta was seen between the two groups. Loss of blood was significantly less in the non-Fe group ($p<0.05$). Based on the dropout rate and Hb and serum ferritin levels one month after delivery, we concluded that iron preparations should be administered when Hb level is 10.0 to 10.4g/dl at 28 to 30 weeks, but not when it is 10.5 to 10.9g/dl.