

- 499 Alph-2 adrenoceptor on rat myometrium. M.Kyozuka, Y.Abe, S.Wagatsuma, K.Suzuki, Dept. Obst. and Gynec., Iwaki Kyoritu General Hosp., Fukushima.

It is generally accepted that presynaptic alpha-2 adrenoceptors make a role to regulate releasing adrenergic transmitters and physiological denervation of myometrium takes place at term. We examined whether specific binding sites for [³H]rauwolscine were present on microsomal membrane fraction of nonpregnant, day16 pregnant and delivering rats. Specific binding of [³H]rauwolscine to microsomal fraction was saturable. The mean \pm SEM of Kd to nonpregnant, day16 pregnant and day22 pregnant was 14.3 \pm 1.2, 17.5 \pm 4.0, 12.7 \pm 1.6 nM respectively. Bmax of them was 245.1 \pm 18.6, 360 \pm 59.6, 222.7 \pm 22.8 fM/mg protein respectively. Binding sites for [³H]rauwolscine of similar were present in all groups of myometrium and significant increase in density in day16 pregnant myometrium.

- 500 Contractile properties and cytoskeletal proteins of uterine smooth muscle cell during pregnancy in rats. K. Ohura, M. Nakano, Y. Shimizu, K. Ochiai, Y. Terashima, Dep. obst. and Gynec., Jikei Univ. Sch. Med., Tokyo.

During pregnancy, it has been well known that contractile properties of uterine smooth muscle changes drastically. To know the fundamental mechanisms of uterine contraction, we investigated contractile proteins and other cytoskeletal proteins by immunochemically and SDS-PAGE, using single cell method according to Momose et. al.. We obtained single cells of rat uterine smooth muscle at non-pregnancy and each period of pregnancy, 7th. day, 14th. day, 21th. day respectively. Using antibody were Anti-myosin, Anti-actin, Anti-tubulin, Anti calmodulin and Anti-tropomyosin. Results obtained were as follows. (1) Myosin increased during pregnancy, especially after preg. 14th. day not only heavy chain but light chain. (2) Actin, tubulin, calmodulin, tropomyosin increased at term of pregnancy. These results suggested that the changes of contractile properties of uterine smooth muscle during pregnancy were not mainly occurred by myosin but also cytoskeletal proteins.

- 501 Analysis of 5HT and histamine-induced vasoconstrictor responses of isolated and perfused human umbilical arteries. F. Yoshikawa, K. Nakayama, T. Yoshizawa, T. Fukuta, Dept. Obstet. and Gynecol., Shinshu Univ. Sch. Med., Matsumoto.

Using the cannula inserting method, we studied vascular responses of isolated and perfused human umbilical arteries to several vasoactive substances, especially 5-hydroxytryptamine (5HT) and histamine. The 5HT-induced vasoconstrictions were markedly suppressed by methysergide but not by ketanserin. The histamine-induced vasoconstrictions were significantly depressed by chlorpheniramine but not by cimetidine. The vascular responses to 5HT and histamine were not influenced by removal of the endothelium by an intraluminal bolus injection of saponin. However, in 7 of 28 preparations precontracted by prostaglandin F_{2α}, dimaprit produced vasodilations, which were suppressed by cimetidine or the removal of the endothelium. These results suggest that 1) 5HT-induced vasoconstrictions are mediated by 5HT₁ receptors, 2) histamine-induced vasoconstrictions are mediated by H₁ receptors, 3) H₂ receptors are present, though sparse, on endothelium, and 4) the endothelium of human umbilical arteries release an endothelium-derived relaxing factor not in response to 5HT and histamine.