138 The effect of 5-lipoxygenase product on PGI_2 production in guinea pig lung. H.C.Lee, *I.Miyakawa, Miyazaki Koga General Hosp., *Ohita Medical College, Miyazaki, *Ohita.

Leukotrienes(LTs) have been reported to be produced in rabbit lung of experimental amniotic fluid embolism(AFE). LTs cause respiratory and circulatory symptoms, and were considered as one of mediators of AFE. Prostaglandins(PGs) possess some activities similar to LTs. In order to investigate LT-PG interaction, following experiment was performed. 3 gm guinea pig lung was chopped in 4 ml buffer(control group), buffer with 4 μg/ml indomethacin(indomethacin group) and buffer with 2.5×10^{-5}M AA-861(AA-861 group). Chopped lung was incubated for 30 min. 250 μl of incubation medium was taken from each group before incubation and at 3,5,10,15,20,25 and 30 min of incubation and was centrifuged. The supernate was tested for PGI_2 like substance(PGI_2) by platelet aggregation inhibition. PGI_2 production was high in the initial 3-5 min and decreased afterward. PGI_2 production was almost completely inhibited in indomethacin group through whole incubation time and partially inhibited in AA-861(5-lipoxygenase inhibitor) group in the initial few mins. 5-lipoxygenase products in the early stage of incubation probably enhance PGI_2 production in guinea pig lung.

139 RELATIONSHIP BETWEEN FETAL HYPOXIA AND ENDOTHELIN-1 IN FETAL CIRCULATION. K.Hashiguchi*, K.Takagi, M.Naruse**, M.Nakabayashi, Y.Takeda*, S.Sakamoto, H.Demura**. Maternal & Perinatal Ctr., Dept. of OB/GYN*, Inst. of Clin. Endocrinol.**, Tokyo Women's Med. Coll., Tokyo.

The role of Endothelin(ET)-1 in fetal circulation was investigated in relation to fetal hypoxia. Umbilical venous blood was obtained from 31 subjects who delivered at term with or without the diagnosis of fetal distress based on intrapartum cardiotocographic findings. Blood gas analyses were performed in umbilical arterial and venous blood immediately after the delivery of placenta. ET levels in the same samples were determined by RIA (Naruse et al., Biochem Biophys Res Commun 160:662,1989). Mean immunoreactive ET level in the umbilical cord plasma (UmET;pg/ml, mean +/-SEM.) of the fetal distress group (13.35+/-2.23;n=7) was 1.4 fold greater than that of the normal control group (9.52+/-1.09;n=24), ($p<0.1$). Furthermore, there were linear correlations between ET levels and pH values in both umbilical arterial and venous samples from 31 cases with coefficient values of $r=-0.54$ ($p<0.05$), and $r=-0.61$ ($p<0.001$), respectively.

These results suggest that ET in fetal circulation is involved in the regulation of fetoplacental circulation in response to the changes in acid base balance related to fetal hypoxia.

140 Morphological and Functional Study of Rat Implantation Site. T.Takami K.Ohtani, H.Sakamoto, K.Satoh, Dept.Obstet.Gynecol., Nihon Univ.Sch.Med.Tokyo.

Successful completion of implantation demands close interaction between fertilized ova and the endometrium. The signal interaction between the two, however, is hardly studied in higher primates but in rats the implantation has been known to occur anti-mesenterial site (receptive endometrial gutter;REG). This makes the model suitable to study preimplantation changes occurring at the site which is destined to accommodate fertilized ova. [1]Post conception day 1 (pc 1), rats were unilaterally tubal ligated and were sacrificed on pc3 to study changes in the REG.[2]Rats were injected with 200ug of indomethacin (IDM), ip and the REG was studied on pc5.[3]On pc2, unilateral uterine horn was injected with 0.5mg of fibronectin active binding peptide (RGDS) and rats were allowed to continue pregnancy until pc 4 or pc10. There was no light microscopic differences between ligated and nonligated horn before implantation but scanning electron microscopy showed enlargement of microvilli at REG in the nonligated horn. This change was completely inhibited by IDM. The RGDS blocked implantation but not decidual formation. The present observations indicate that interference of prostaglandin synthesis or fibronectin receptor blockade during pre-implantation inhibits implantation by altering REG function.