These data suggest that PGs particularly PG E_2 generations on the uterine and the renal vascular bed to the increased level of pressor substances play a protective role from the decrease of uterine and renal blood flow during pregnancy.

100. In vitro Production of 6-keto-$PGF_{1\alpha}$ by Human Pregnant Uterus and Placenta

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The activity to produce 6-keto $PGF_{1\alpha}$, the stable PG formed by the nonenzymatic degradation of highly active but labile PGI_2 (prostacyclin), was investigated by the incubation study using the human decidua, amnion (n=18) and pregnant myometrii of uterine body and cervix obtained before and after onset of labor (n=18) and human nonpregnant myometrii collected during luteal phase (n=5). PGE, F and 6-keto-$PGF_{1\alpha}$ produced were measured by radioimmunoassay developed in our laboratory. The results are as follows.

1) The radioimmunoassay for 6-keto-$PGF_{1\alpha}$ was satisfactory in its accuracy, precision and sensitivity.

2) In the pregnant myometrii, which had a much higher activity to produce PGs than the non-pregnant, 6-keto-$PGF_{1\alpha}$ was produced much more than PGE and F. ($P<0.01$).

3) The pregnant myometrium of uterine body produced 6-keto-$PGF_{1\alpha}$ of 40 to 200 fold compared with the decidua and amnion.

4) Whether pregnant or nonpregnant, the myometrium of uterine body produced larger quantities of 6-keto-$PGF_{1\alpha}$ than ceruix. ($P<0.005$)

5) Contrary to the pattern of PGF production, 6-keto $PGF_{1\alpha}$ was formed in the myometrium of uterine body in a decreasing fashion in association with uterine contraction.

These results suggest that the parturition process may be initiated and promoted by a diversion of arachidonic acid metabolism from the pathway to PGI_2 to that to $PGF_{2\alpha}$ or by breaking the balance between the production of $PGF_{2\alpha}$ and PGI_2 in human myometrium.

101. Prostaglandin I_2(Prostacycline) Synthesizing Activity of Human Ripening Uterin Cervix

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It is an important problem to demonstrate the function of prostaglandins for the ripening mechanism in human uterine cervix at term pregnancy.

Participation of prostaglandins in the contraction has been established and prostaglandin E_2 and $F_{2\alpha}$ have actually been clinically used. Regarding the ripening of uterine cervix, however, involvement of prostaglandins is still not conclusive.

We have examined prostaglandin synthesizing activity in human uterine cervix at delivery. The control samples were obtained from hysterectomy specimens of non-pregnant women of childbearing age for comparison with those taken from the cervix immediately after delivery.

In the ripening cervix at delivery, the radioactive arachidonic acid was converted into several prostaglandins. The main product had a chromatographic mobility indentical with 6-ketoprostaglandin $F_{1\alpha}$, a stable matabolite of prostacyclin. The production of 6-ketoprostaglandin $F_{1\alpha}$ in the ripening cervix was compared with that of non-pregnant cervix. 6-ketoprostaglandin $F_{1\alpha}$ production in the ripening cervix was more than 6 times per wet weight and 37 times per DNA as much as that obtained from non-pregnancy.

On the other hand, we have reported that prostacycline has a stimulatory effect on Hexosamine-containing substance production and an inhibiting effect on collagen production using cultured rat fibroblasts. Our data presented here suggest that prostacyclin may play an important role in the