Summary

In the last few years, there are many studies have been performed to explain the effect of diabetes mellitus on uterine contractility.

The prenatal mortality rate of infants of diabetic women is higher than that observed in normal gestation. So, in this study we tried to investigate the effect of diabetes mellitus on the uterine muscles and to what extent diabetes mellitus changes in it. Also, investigate how diabetes mellitus effect in the presence or absence of pregnancy and record the results.

In the present study two main hormones were used, that are uterotonic agents, to investigate the mechanical response of the uterine smooth muscles before and after induction of diabetes mellitus.

This work was carried out on 48 albino female rats; 24 are non diabetic rats, and 24 are diabetic rats, the animals were divided as follows:

1- Control groups

Group (1): consisted of 12 non pregnant mature animals.

Group (2): consisted of 12 pregnant animals at 7 th day of gestation.

** Group (1): consisted of two subgroups;

Subgroup (A); consisted of six myometrial strips of non pregnant rats to study the effects of 0.01, 0.1, 1 mg/ml oxytocin on their muscular reactivity.

Subgroup (B); consisted of six myometrial strips of non pregnant rats to study the effects of 1, 10, 100nM of PGF_{ai} on their muscular reactivity.

**Group (2): consisted of two subgroups;

Subgroup (A); consisted of six myometrial strips of pregnant ratsat 7 th day of gestation to study the effects of 0.01, 0.1, 1 mg/m1 oxytocin on their muscular reactivity.

Subgroup (B); consisted of six myometrial strips of pregnant ratsat 7th day of gestation to study the effects ofl , 10, 100nM of $PGF2_{c}$, on their muscular reactivity.

2-Diabetic groups

Consisted of;

Group (1): consisted of 12 diabetic non pregnant mature rats each non pregnant rat was injected with 85 mg/kg of streptozotocin to induce diabetes mellitus.

Group (2): consisted of 12 diabetic pregnant rats at 7 th day of gestation each pregnant rat was injected with 50 mg/kg of streptozotocin to induce diabetes mellitus.

**Group (1): consisted of two subgroups;

Subgroup (A); consisted of six myometrial strips of diabetic non pregnant rats to study the effects of 0.01, 0.1, 1 mg/ml oxytocin on their muscular reactivity.

Subgroup (B); consisted of six myometrial strips of diabetic non pregnant rats to study the effects of 1, 10, 100nM of PGF_{2ci}on their muscular reactivity.

**Group (2): consisted of two subgroups;

Subgroup (A); consisted of six myometrial strips of diabetic pregnant rats at 7th day of gestation to study the effects of 0.01, 0.1, 1 mg/ml oxytocin on their muscular reactivity.

Subgroup (B); consisted of six myometrial strips of diabetic pregnant rats at 7th day of gestation to study the effects of 1, 10, 100nM of $PGF2_{e}$, on their muscular reactivity.

The present results have shown that diabetes mellitus has an effect on the filaments of the smooth muscles which lead to disturbances of the uterus during pregnancy (changes in uterine responses to hormones) and also causes a premature abortion at t^{h} day of gestation due to inability of the myometrium to carry the fetus . Also, it was found that diabetes mellitus affect the fetoplacental circulation ,as it affect the blood vessels, causing its contraction, and as a result the blood supply cannot reach the baby as it's demand .

As recommendation, diabetes mellitus must be controlled until reach a moderate level before induction of pregnancy in order to bring a well developed fetus without any complications.