ORAL VERSUS VAGINAL SILDENAFIL IN REDUCING INTRA-PARTUM FETAL DISTRESS AND ENHANCEMENT OF NORMAL VAGINAL DELIVERY

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Introduction

Normal vaginal delivery is defined as a low-risk pregnancy of spontaneous onset of labor taking place between 37 and 42 weeks' gestation, and it is the safest way for the fetus and the mother.

The force caused by the contractile myometrial bundles during labor causes reduction in blood flow with each contraction, as there is a reduction in the placental blood flow causing less efficient gas and nutrient exchange which is detected by the fetus stimulating an increase of heart rate as force getting stronger.

Sildenafil citrate (SC) is potent, selective, and is considered as reversible PDE5 inhibitor which is abundant in the Corpus Cavernosum of the penis and pulmonary arteries. It increases the NO action through PDE5 hindering, resulting in relaxation of smooth muscles and The work was designed to assess sildenafil citrate via different routes versus vaginal placebo to decrease caesarean deliveries due to intra-partum fetal distress depending on the hypothesis that entails that through its vasodilatory action and by increasing uterine and placental perfusion in labor, cervical dilation is enhanced through vasodilation which increases blood flow carrying prostaglandins and hormones acting on cervical tissues, causing more dilatation and effacement, improving myometrium performance which ultimately results in shortening time of delivery and decreasing fetal distress.

Aim of the work

The aim of the current study was to assess the efficacy of oral versus vaginal in enhancement of normal vaginal delivery and decreasing the incidence of fetal distress that need operative intervention.

Subjects and Methods

300 normal primigravida women in labor with neither chronic illnesses nor pregnancy induced conditions such as diabetes or hypertension and having completely normal healthy average sized fetuses with normal amount of liquor and reassuring cardio-togogram. The studied cases were allocated and divided into 3 groups received oral sildenafil, vaginal sildenafil or vaginal placebos eight hourly, patients were randomly included in any of the three groups.

Results

The group receiving oral sildenafil showed significantly shorter time of duration and had better APGAR score compared to vaginal SC or placebo.

No statistical differences were found between the 3 groups regarding either the number of emergency c-section deliveries or the percentage of NICU admission of the neonates.

Table 1: Comparison between the three studied groups according to APGAR score.

APGAR score	Group A (n = 100)	Group B (n = 100)	Group C (n = 100)	H	p
1st					
Min. – Max.	2.0 – 8.0	3.0 – 8.0	3.0 – 8.0	14.673*	0.001*
Mean ± SD.	7.38 ± 1.17	7.48 ± 1.31	7.50 ± 1.44		
Median (IQR)	8.0 (7.0 – 8.0)	8.0 (8.0 – 8.0)	8.0 (8.0 – 8.0)		
Sig.bet.Grps	p_1=0.009*, p_2<0.001*, p_3=0.256				
2nd					
Min. – Max.	5.0 – 10.0	5.0 – 10.0	5.0 – 10.0	8.506*	0.014*
Mean ± SD.	9.48 ± 1.06	9.46 ± 1.37	9.50 ± 1.44		
Median (IQR)	10.0 (9.0 – 10.0)	10.0 (10.0 – 10.0)	10.0 (10.0 – 10.0)		
Sig.bet.Grps	p_1=0.087, p_2=0.004*, p_3=0.235				

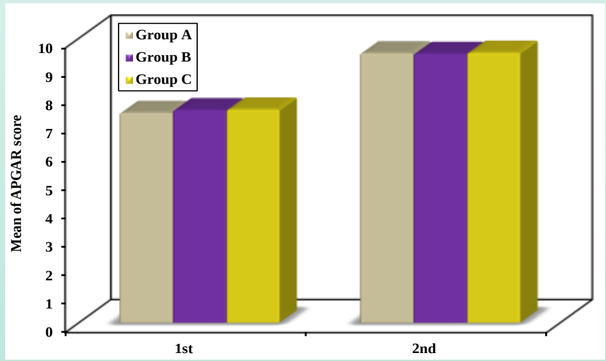

Figure 1: Comparison between the three studied groups according to APGAR score of neonates.

Table 2: Comparison between the three studied groups as regards duration of labor (admission to delivery time)

Duration of delivery (hours)	Group A (n = 100)	Group B (n = 100)	Group C (n = 100)	H	p
Min. – Max.	2.0 – 12.0	3.0 – 13.0	3.0 – 13.0	7.603*	0.022*
Mean ± SD.	5.76 ± 2.38	6.55 ± 2.57	5.88 ± 2.67		
Median (IQR)	5.75 (4.0 – 7.0)	6.0 (5.0 – 8.0)	5.0 (4.0 – 7.0)		
Sig.bet.Grps	p_1=0.022*, p_2=0.844, p_3=0.013*				

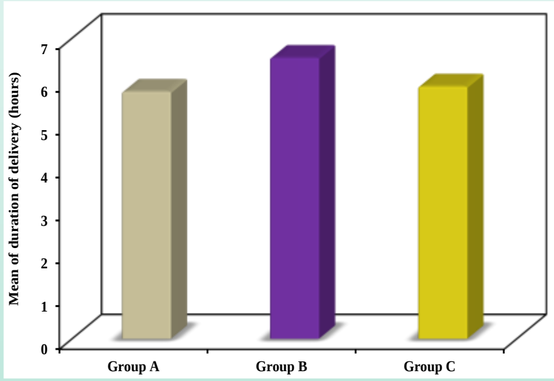

Figure 2: Comparison between the three studied groups according to duration of labor (admission to delivery time)

Conclusion

- Oral sildenafil may be an acceptable therapeutic option to decrease intra-partum fetal distress through enhancing vaginal delivery by shortening its time.
- Vaginal sildenafil results were close to the placebo group which needs another chance for studying.