ABSTRACT

TITLE OF ABSTRACT: Study of the effect of Tadalafil on the contractility of isolated non-pregnant human myometrium

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OBJECTIVES:

The study was conducted to determine whether tadalafil inhibits the potassium chloride (KCl)-induced contractility of isolated non-pregnant human myometrium, and if so, to study the probable mechanism of action involved.

METHODS:

Myometrial tissue was obtained from 11 patients who underwent hysterectomy. The effect of tadalafil on 55 mM KCl-induced contractility of isolated non-pregnant human myometrium was studied using a physiograph. The ability of the specific calcium-sensitive potassium (BKCa) channel blocker iberiotoxin (100 nM) to reverse the inhibitory effect of 40 μM tadalafil on KCl-induced myometrial contractility was also studied. The percent inhibition
caused by tadalafil with and without iberiotoxin was calculated and statistically analyzed using the Wilcoxon signed-rank test in ‘R’ program (3.1.1).

RESULTS:

Tadalafil produced a statistically significant inhibition of KCl-induced myometrial contractility. The inhibition of 40 μM tadalafil on myometrial contractility was totally and significantly reversed by the concurrent administration of iberiotoxin. These results suggest that tadalafil inhibits the contractility of isolated non-pregnant human myometrium. The results also suggest that tadalafil does so by opening BKCa channels. Hence tadalafil could possibly be evaluated for use as a uterine relaxant for the management of clinical conditions like preterm labour that require myometrial relaxation.

Key words: Contractility, myometrium, tadalafil, non-pregnant, iberiotoxin