

The Effect of Visfatin on Pregnant Mouse Myometrial Contractility in vitro

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Abstract : Obesity is a worldwide disorder influencing women's health and childbearing. There is a close relation between obesity and pregnancy related complications. Dyslipidemia and adipokine dysregulation are core environmental changes that may mechanistically link these complications with obesity in pregnant women. We have previously found that visfatin has a relaxant effect on mouse, rat and human myometrial contractility. We hypothesised that visfatin inhibits mouse myometrial contractility through the NAD⁺ pathway. This study was designed to examine the mechanism of action of visfatin on myometrial contractility. To examine the NAD⁺ pathway, FK866 which is a potent inhibitor of NAD⁺ biosynthesis was used. **Methods:** Myometrial strips from term pregnant mice were dissected, superfused with physiological saline and the effects of visfatin (10nM) on oxytocin-induced contractions (0.5nM) alone and after the infusion of FK866 (10uM) were studied. After regular contractions were established, contractility was examined for control (100%) and test response at 37 °C for 10 min each. **Results:** FK866 was found to inhibit the effect of visfatin on myometrial contractility (the AUC increased from 89±2% of control, P=0.0009 for visfatin alone to 97±4% of control, P>0.05 for visfatin combined with FK866, n=8). In conclusion, NAD⁺ pathway appears to be involved in the mechanism of action of visfatin on mouse myometrium. This could have a role in making new targets to prevent obesity-related complications.

Keywords : myometrium, obesity, oxytocin, pregnancy, visfatin

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