



Journal of Health Disparities Research and Practice
Volume 9, Special Edition 1, Summer 2016, pp. 137

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Protein Expression of Steroid Receptors in *Macaca mulatta* endometriotic Lesions

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ABSTRACT

Endometriosis is pathologically defined as the presence of endometrial tissue in ectopic locations. Currently, there are no specific, non-invasive biomarkers and no cure for endometriosis. Non-human primates (NHP), including *Macaca mulatta* (rhesus macaques), have been highlighted as appropriate models to study endometriosis due to genetic, physiological, and anatomical similarities to humans. Research shows endometriosis might be associated with molecular deviations in human peritoneal endometriosis, such as increased levels of estrogen receptors and decreased levels of progesterone receptors.

The aim of this study is to determine protein expression of steroid receptors in five endometriotic lesions of rhesus macaques. We propose that lesions of rhesus macaques will express elevated estrogen receptors and diminished progesterone receptors, similar to human endometriotic lesions. Endometriotic lesions of rhesus macaques were obtained at time of surgery from different locations, and steroid receptor expression was determined by immunohistochemistry. This study was able to determine the expression of steroid receptors in endometriotic lesions of rhesus macaques; however the results were not able to support our hypothesis. Results did not observe significant differences between estrogen and progesterone receptor protein expressions in glandular and stromal compartments of the endometriotic lesions. Still, this animal model represents a valuable tool to study endometriosis since they do develop spontaneous endometriosis. Future studies should match the location of lesions and classify the severity of endometriosis in the rhesus macaques.

Key words: Endometriosis, rhesus macaques, steroid receptors, non-human primates, immunohistochemistry

ACKNOWLEDGEMENTS

The STEP-UP HS program is supported by the National Institute of Diabetes and Digestive and Kidney Diseases of the National Institutes of Health, Grant number: 1R25DK098067-01.