

Study on use of umbilical cord vs. biocellulose film for antenatal spina bifida repair

1 February 2016

In a study to be presented on Feb. 5 in an oral plenary session, at the Society for Maternal-Fetal Medicine's annual meeting, The Pregnancy Meeting, in Atlanta, researchers will present findings from a study titled, Cryopreserved Human Umbilical Cord (HUC) vs. Biocellulose Film (BCF) for Antenatal Spina Bifida Repair.

Spina Bifida is a birth defect where there is incomplete closing of the backbone and the coverings around the [spinal cord](#). The [birth defect](#) is associated with lifelong disability and death due to complications. In-utero surgery has been recently shown to improve the ability to walk and to reduce the need for shunting of hydrocephalus. However, over half of these children do not benefit from the in-utero [repair](#). Researchers are trying to find a regenerative patch material for repair that would further reduce morbidity after repair through decreased damage to the spinal cord from inflammation and scar formation. This study sought to compare two patches that can be used in utero to repair the closing of the backbone with material that will promote regeneration of different coverings of spine.

Although the study took place in a rat model of [spina bifida](#), it provided promising results. The human umbilical cord patch was determined to promote cellular migration of epidermal, neuronal and endothelial cells with minimal inflammatory response compared to biocellulose film.

"By finding a patch that will regenerate coverings of the spinal cord, with minimal inflammation and [scar formation](#), we hope to improve the outcomes of in-utero spina bifida repair. We have established more evidence in large animal models and human cases, which showed similar results. This is a initial step toward a safe minimally invasive in-utero repair." stated Ramesha Papanna, M.D., M.P.H.,

the principal investigator of the project at The Fetal Center, Children's Memorial Hermann Hospital Dept. OB/GYN McGovern Medical School at The University of Texas Health Science Center at Houston (UTHealth). Saul Snowise, M.D. is a fetal intervention fellow at The Fetal Center and has actively worked and participated under the guidance of his mentor Dr. Papanna in the development of this project. Dr. Snowise is the primary author of the study and will present the findings.

Provided by Society for Maternal-Fetal Medicine

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