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NEWS

RSNA Press Release

Study Offers Hope for Women with Sexual Dysfunction

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OAK BROOK, Ill. — By studying sexual response in healthy women, researchers hope to gain insight into the problem of female sexual dysfunction, according to a University of Washington study published in the December issue of the journal *Radiology.*

For the study, researchers were able to successfully monitor sexual arousal responses in healthy women using magnetic resonance (MR) imaging and a recently developed blood-contrast agent called MS-325.

"Traditionally, research in the area of female sexual dysfunction has focused primarily on psycho-social factors," said study co-author Kenneth R. Maravilla, M.D., director of neuroradiology and the MR Research Laboratory at the university. "But with the development and success of Viagra for men, the physiology of female arousal has become an area of significant research today."

The American Academy of Family Physicians estimates that as many as 50 percent of all women may experience sexual dysfunction. Despite advances in the diagnosis and treatment of male sexual dysfunction, efforts to study female sexual dysfunction have lagged, in part because of a lack of reliable methods for monitoring the female sexual arousal response.

Female sexual dysfunction is believed to be the result of a broad range of medical and/or psychological conditions, many of which may contribute to an inadequate vascular response to sexual stimulation. A number of diagnostic tools have been used in an attempt to assess the vascular component of female sexual arousal, but all have been limited in their ability to provide reliable genital blood flow measurements.

"What we've been lacking is an objective and minimally intrusive way to visualize the anatomic changes that accompany a woman's sexual arousal response, which is largely invisible," Dr. Maravilla said. "We believe MR imaging with MS-325 is a robust technique that will help us better understand a normally functioning female sexual arousal response, and eventually, to diagnose and develop treatments for women with an inadequate vascular response."

The study consisted of 12 healthy females, including 6 pre-menopausal women between the

ages of 23 and 38 years and 6 post-menopausal women between the ages of 53 and 66 years. Before and after an intravenous injection of the blood-pool agent MS-325, serial MR images were obtained while the subjects viewed both neutral and erotic video material. Two control subjects viewed neutral video material only. The subjects were asked to complete questionnaires to report their degree of sexual arousal.

The MR images obtained while the women viewed erotic material showed a significant increase in the overall size and blood volume of the clitoris. The average clitoral volume of all subjects nearly doubled from 10.74 cm^3 during viewing of a neutral video segment to 21.17 cm^3 during the erotic segment. The questionnaire responses corroborated the degree of sexual arousal caused by the video segments.

A key to the study was the use of the newly developed blood-pool contrast agent MS-325, which makes the blood-filled cavities of the body appear brightly colored on MR images. Unlike other contrast agents, MS-325, which is currently undergoing clinical trials, remains in the blood stream for the 45 minutes necessary for imaging sexual arousal responses. Interestingly, the study found no significant difference between the sexual arousal responses of the pre- and post-menopausal subjects. In contrast to previous studies that have linked increased sexual dysfunction with age, this study showed that the sexual arousal responses of the post-menopausal women matched or exceeded those observed in the pre-menopausal women.

"Based on the normal group of women we studied, it appears that age alone does not necessarily imply a decline in a woman's arousal response," Dr. Maravilla said, adding that further research using a larger study group is required. Radiology is a monthly scientific journal devoted to clinical radiology and allied sciences. The journal is edited by Anthony V. Proto, M.D., School of Medicine, Virginia Commonwealth University, Richmond, Virginia. Radiology is owned and published by the Radiological Society of North America Inc. (http://radiology.rsna.org)

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"Female Genitalia: Dynamic MR Imaging with Use of MS-325-Initial Experiences Evaluating Female Sexual Response." Collaborating with Dr. Maravilla on this study were Anastasia V. Deliganis, M.D., Julia R. Heiman, Ph.D., Wayne O. Carter, Ph.D., D.V.M., Patricia A. Garland, B.A., Barry T. Peterson, Ph.D., Lucianne Hackbert, Ph.D., Yunyu Cao, M.D., M.S. and Robert M. Weisskoff, Ph.D.