Imaging with radio-labeled tracer correlates with identification of early-stage endometriosis by laparoscopic surgery

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Credit: Sora Shimazaki from Pexels

Research presented at The Society for Reproductive Investigation Meeting summarized preliminary findings from patients with known or suspected endometriosis who were imaged with a SPECT-CT camera and subsequently underwent planned laparoscopic surgery, a key-hole surgical procedure to establish the presence, absence and location of endometriotic lesions. The imaging findings were compared to the surgical and histology reports and indicate that ^{99m}Tc-maraciclatide holds potential as a non-invasive test for early-stage endometriosis.

Specifically these preliminary findings demonstrate that ^{99m}Tc-maraciclatide has the potential to:

- Visualize superficial peritoneal endometriosis which is found in the thin peritoneum lining which covers the abdomen and pelvis, and currently can only be identified accurately by surgery. This subtype accounts for 80% of all endometriosis diagnoses. In the patients in this study, ^{99m}Tc-maraciclatide correctly identified superficial peritoneal endometriosis in those who went on to have this early-stage endometriosis confirmed by laparoscopy.
- Highlight areas of activity in patients with deep endometriosis (often found on the organs e.g., bladder, bowel, rectum, ovaries) and endometrioma (cysts which are commonly found in the ovaries).

The presentation also outlined a case study on one patient with superficial peritoneal endometriosis which had not been identified by ultrasound, but which had been visualized with ^{99m}Tc-maraciclatide, and later confirmed by laparoscopic surgery.

The ongoing study which will recruit 20–25 patients in total is being led by Professor Christian Becker, Co-Director of the Endometriosis CaRe

Center in Oxford, together with Professor Krina Zondervan, Head of Department at the Nuffield Department of Women's and Reproductive Health, University of Oxford. It is anticipated that the study will complete later this year.

^{99m}Tc-maraciclatide is a radio-labeled tracer which binds with high affinity to the cell adhesion protein $\alpha_v\beta_3$ integrin and images angiogenesis (new blood vessel formation) which is known to be critical to the establishment and growth of endometriotic lesions.

David Hail, Chief Executive Officer of Serac Healthcare, said, "These promising initial findings indicate that there is real potential for maraciclatide as a novel non-invasive method of diagnosing early-stage endometriosis. The ability to visualize the early-stage of this disease is particularly significant as it cannot be seen by other imaging modalities, which contributes to the almost nine year average delay to secure a diagnosis. We are hugely encouraged by these results and look forward to continuing this work with the world-leading specialists from Oxford University."

Becker added, "Endometriosis is a common disease affecting many millions of women worldwide with pain and infertility. The current delay in diagnosis results in prolonged suffering and uncertainty. Therefore, a novel imaging tool to assist health care professionals in identifying or ruling out the disease is urgently needed."

Zondervan added, "Superficial peritoneal endometriosis is the most prevalent form of the disease. It often affects younger women for whom earlier diagnosis could enable intervention at an earlier stage, with the potential to significantly change outcomes and improve prospects. At the Endometriosis CaRe Center at the University of Oxford, our studies focus on identifying novel genetic, diagnostic and therapeutic targets for endometriosis. We are delighted about the early results of the DETECT

study and are looking forward to recruiting more patients to consolidate the data."

Provided by University of Oxford

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