BMUS 2015 Abstract

**Title:** The use of texture analysis in diagnosing ovarian masses.

**Background:** Ovarian cancer has the highest mortality rate of all gynaecologic cancers and is the fifth most common cancer in UK women. Amongst various imaging modalities, ultrasound is considered the main modality for ovarian cancer triage. Like other imaging modalities, the main issue is that the interpretation of the images is subjective and observer dependent. Texture analysis has been shown to have potential in the objective assessment of ovarian cancer in a preliminary study**.**

**Purpose:** To assess prospectively the diagnostic performance of texture analysis in discriminating between benign and malignant adnexal masses and between different types of benign masses.

**Materials and methods:** ultrasound images were collected from participants and transformed to a PC as a BMP files for off-line analysis. MaZda software was used to perform the texture analysis. In a preliminary study two texture analysis features showed usefulness in differentiating benign from malignant masses which are grey-level co-occurrence matrix (GLCM) and wavelet and were applied to masses ([Hamid et al., 2011](#_ENREF_1)). Then readings were compared to histology results of participants. P-value was calculated for the significance.

**Results and Conclusions:** Masses were divided into benign, malignant and simple cysts. Benign masses were sub-classified to dermoid, fibroid, endometrioma and suspicious benign masses. Preliminary results showed a significance difference between benign and malignant masses p= .007, p=.04 for GLCM and wavelet respectively. Significance differences were found between the subgroups as well. The results of the full cohort will be discussed and explained in the meeting.

**References:**

HAMID, B., PUGH, N. D., COLEMAN, D. P. & NOKES, L. D. M. 2011. *The Reliability of B-mode transvaginal probe image for the quantitative texture analysis and the dependence of extracted features on region of interest size for ovarian cancer detection.* PhD, Cardiff University.