

## Gynecology & Obstetrics: Non-invasive tools for the diagnosis of gynaecological potentially life-threatening emergencies: A systematic review- Viola Polena- University of Versailles St-Quentin

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**Background:** The prompt and accurate diagnosis of gynaecological potentially life-threatening pathologies (G-PLE) like complicated ectopic pregnancy (C-EP: ruptured ectopic pregnancy), complicated pelvic inflammatory disease (C-PID: tuboovarian abscess & pyosalpinx), adnexal torsion (AT) and hemoperitoneum (HmPT) of any gynaecological origin is crucial for reducing the morbidity and mortality associated with these conditions. **Objective:** To systematically identify non-invasive tools for the diagnosis of any G-PLE described in the literature and to assess their diagnostic accuracy. **Methods:** It was searched the following electronic databases from 1990 to December 2012: MEDLINE; EMBASE; Cochrane Central Register of Controlled Trials (CENTRAL; The Cochrane Library) for English or French language publications reporting on the diagnosis of G-PLE. Studies were eligible if they were diagnostic studies of all designs, with a gold standard, with sufficient information to allow the construction of a contingency table, in which at least one of the G-PLE was concerned. Two of authors (VP, CVR) working independently used a standardized data collection form to extract data from each selected study and assessed the quality of each study using QUADAS 2 tool. **Results:** It was identified 8288 reports of diagnostic studies concerning the G-PLE and 45 articles were suitable for systematic review. The most common diagnostic tool evaluated was transvaginal ultrasound (20/45, 44%) followed by medical history (18/45, 40%). Clinical examination (vital signs, abdominal palpation, bimanual examination) was evaluated in 15 (33%) and laboratory tests (blood count, B-hCG, CRP) in 14 (31%). Through different evaluated signs, 7 ultrasound signs, as well as, the identification of a mass by abdominal palpation or vaginal examination, the measure of systolic blood pressure, the rates of Hb, presented significant diagnostic performances of clinical utility ( $Se \geq 95\%$  &  $LR - \leq 0.25$ , or  $Sp \geq 90\%$  &  $LR+ \geq 4$ ). Abnormal Doppler findings highly suggest an adnexal torsion with both a good

sensitivity (range: 76%; 100%) and specificity (range: 94%; 100%), while free pelvic fluid highly suggest a ruptured ectopic pregnancy or hemoperitoneum with a specificity range through the studies of 91%; 100%. **Conclusions:** In conclusion, the results of this systematic review suggest that non-invasive diagnostic tools and the skill set for clinicians required to deal with different G-PLEs are essentially the same. Medical history and symptoms contribute in the selection of patients with suspected G-PLEs. Assessment of vital signs, as well as clinical examination, ultrasound and laboratory tests should be considered in women with suspected G-PLE, in predicting the presence of G-PLEs. However, no clinical finding or test is reliable sufficiently for detecting G-PLEs. So, they should be incorporated within a diagnostic model in conjunction with other tests. Obtained results highly support the use of ultrasound.