Transvaginal ultrasound scan (TVS) is a routine investigation for subfertile women. The prevalence of individual pathologies has been described in great variety. The vast majority of reporting studies has been performed in a general female population.

Our primary objective was to describe the frequency of abnormal findings on TVS in a population of couples presenting with infertility to a tertiary unit. Our secondary objective was to identify which pathologies were associated with couples with no male factor infertility compared to couples with male factor infertility.

This was a retrospective case-control study of 763 couples presenting to a tertiary unit between February 2013 and May 2017 who had expert TVS examinations in addition to their routine infertility work up. 433 couples with normal semen analysis were compared to a control of 330 couples with abnormal semen analysis.

The median age of the female partner at time of scan was 34 years (IQR 31-37). The majority of men had a normal semen analysis [433/763, 56.7% (95% CI: 53.2-60.2%)]. In couples with a normal semen analysis, 38.6% of women had a normal pelvis on TVS examination [167/433; (95% CI: 34.0-43.3%)].

The most frequent pathology seen on TVS was polycystic ovaries [113/433, 26.1% (95% CI: 22.0-30.5%)], then uterine fibroids [78/433, 18.0% (95% CI: 14.5-22.0%)]. Couples with a normal semen analysis were more likely to have abnormal findings on TVS (RR1.26, 95% CI 1.07-1.49, p=0.006).

The risk of female factor infertility was associated with endometriosis (RR 2.13, 95% CI 1.12-4.04, p=0.02), but there was no difference in polycystic ovaries (RR 0.97, 95% CI 0.76-1.25, p=0.84), uterine fibroids (RR 0.92, 95% CI 0.68-1.24, p=0.57) and adenomyosis (RR 0.91, 95% CI 0.61-1.36, p=0.64).

We found that half the couples presenting with infertility to our unit have an abnormal semen analysis. In couples with a normal semen analysis half will have not relevant pathology identified on scan. We present here the prevalence of various gynaecological pathologies in this population as diagnosed by ultrasound information that can be useful to future researcher designing studies.