# Anogenital Distance and Endometriosis: Results of a Case-Control Study

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## Abstract

AGD is the distance measured from the anus to the genital tubercle. Recent evidence suggests that a shorter AGD, a sensitive biomarker of the prenatal hormonal environment, could be associated with higher endometriosis risk. However, studies investigating AGD in affected women are scanty. We have set up a case-control study recruiting nulliparous women (aged 18-40 years) with endometriosis between 2017 and 2018. Cases were 90 women with a surgical or with a current nonsurgical diagnosis of endometriosis (n = 45 deep infiltrating endometriosis (DIE), and n = 45 ovarian endometrioma (OMA)). Controls were 45 asymptomatic women referring for periodical gynaecological care and without a previous diagnosis of endometriosis. They were matched to cases for age and BMI. For each woman, two measures were obtained using a digital calliper: AGDAC, from the clitoral surface to the upper verge of the anus, and AGDAF, from the posterior fourchette to the upper verge of the anus. Each distance was derived from the mean of six measurements acquired from two different gynaecologists. The mean ± SD AGDAC in women with DIE, OMA and without a diagnosis of endometriosis was 76.0 ± 12.1, 76.1 ± 11.1 and 77.8 ± 11.4 mm, respectively (p = 0.55). The mean ± SD AGDAF in women with DIE, OMA and without a diagnosis of endometriosis was 22.8 ± 5.0, 21.7 ± 9.0 and 23.7 ± 7.8 mm, respectively (p = 0.38). Our study failed to find an association between AGD and the presence of endometriosis. AGD does not seem to represent a reliable indicator of the presence of endometriosis to be used in clinical practice.

**Keywords:**AGD; Anogenital distance; Deep endometriosis; Endometrioma; Endometriosis.