

FRACTAL AND STEREOLOGICAL ANALYSIS OF OVIDUCT FROM COWS SUBMITTED TO OVARIAN SUPERSTIMULATION

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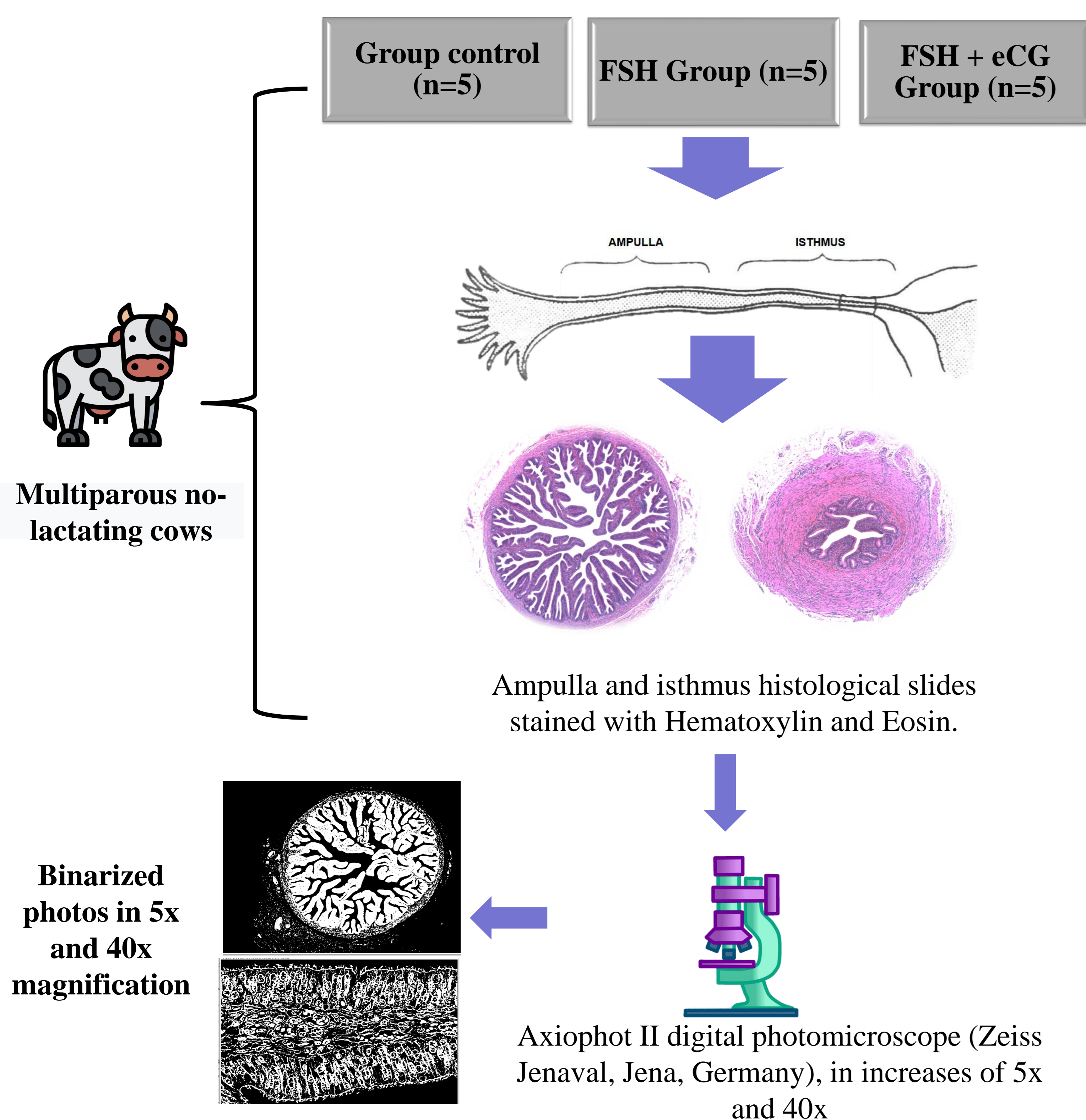
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INTRODUCTION/ OBJECTIVE

Oviduct is a dynamic organ that changes each estrous cycle, presenting different transcriptome and tissue remodeling profiles. In this context, fractal dimension (FD) is used to quantify tissue structural changes. Several studies highlight the effects of ovarian superstimulation (OVS) associated with equine chorionic gonadotropin (eCG) and follicle stimulating hormone (FSH) on regulation of gene expression in the oviduct and changes on oviductal cells differentiation. Our objective was to investigate morphological and fractal changes in the ampulla and isthmus from cows submitted or not to OVS with FSH or FSH combined with eCG.

MATERIAL AND METHODS



RESULTS

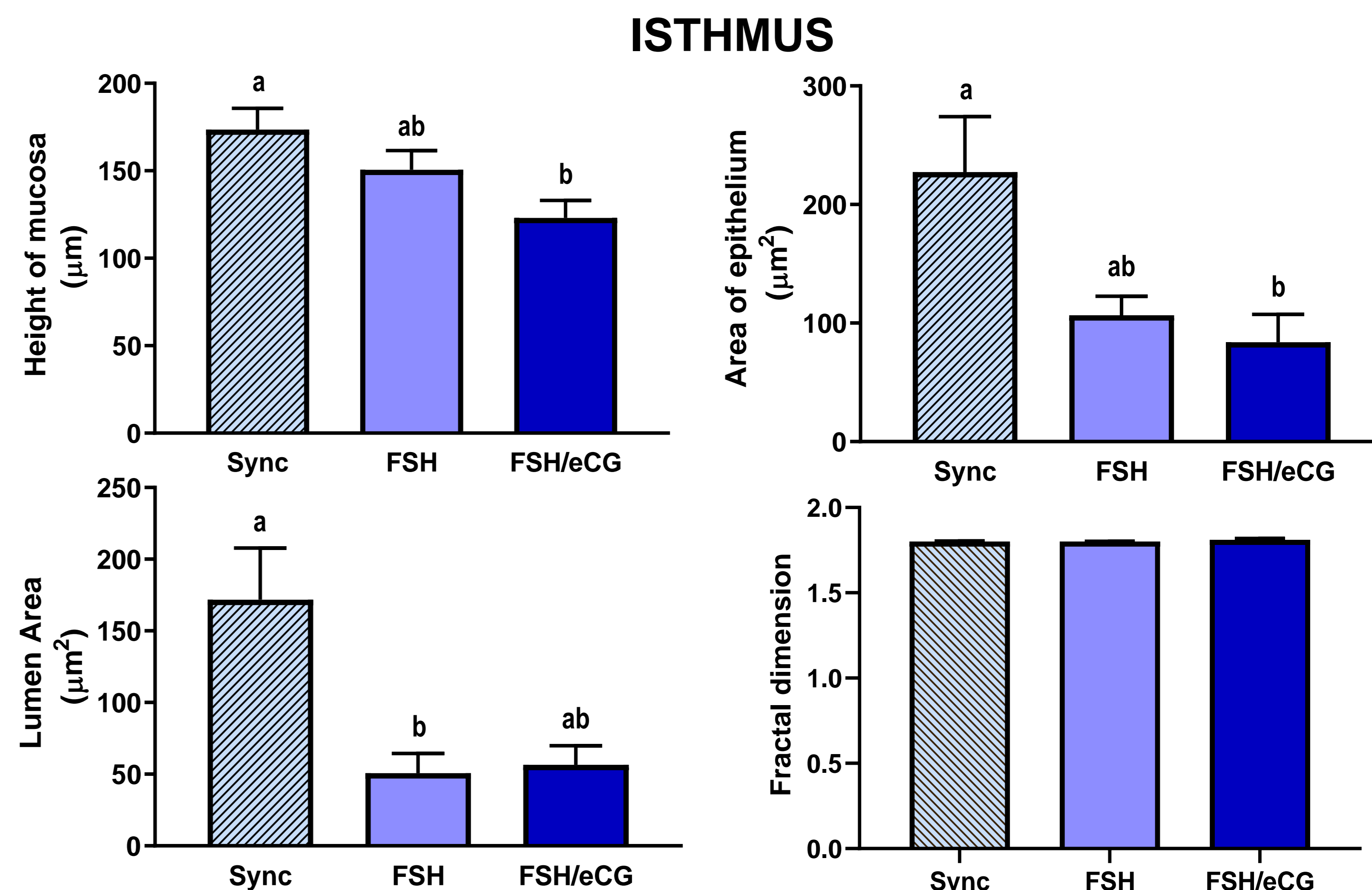


Figure 1. In the isthmus, use of FSH combined with eCG decreased the mucosal height ($p = 0.006$), epithelium area ($p = 0.01$), and minimize lumen area ($p = 0.004$). On the other hand, the fractal dimension had no effect in isthmus of bovine oviducts ($P > 0.05$) compared to non-superstimulated cows.

AMPULLA

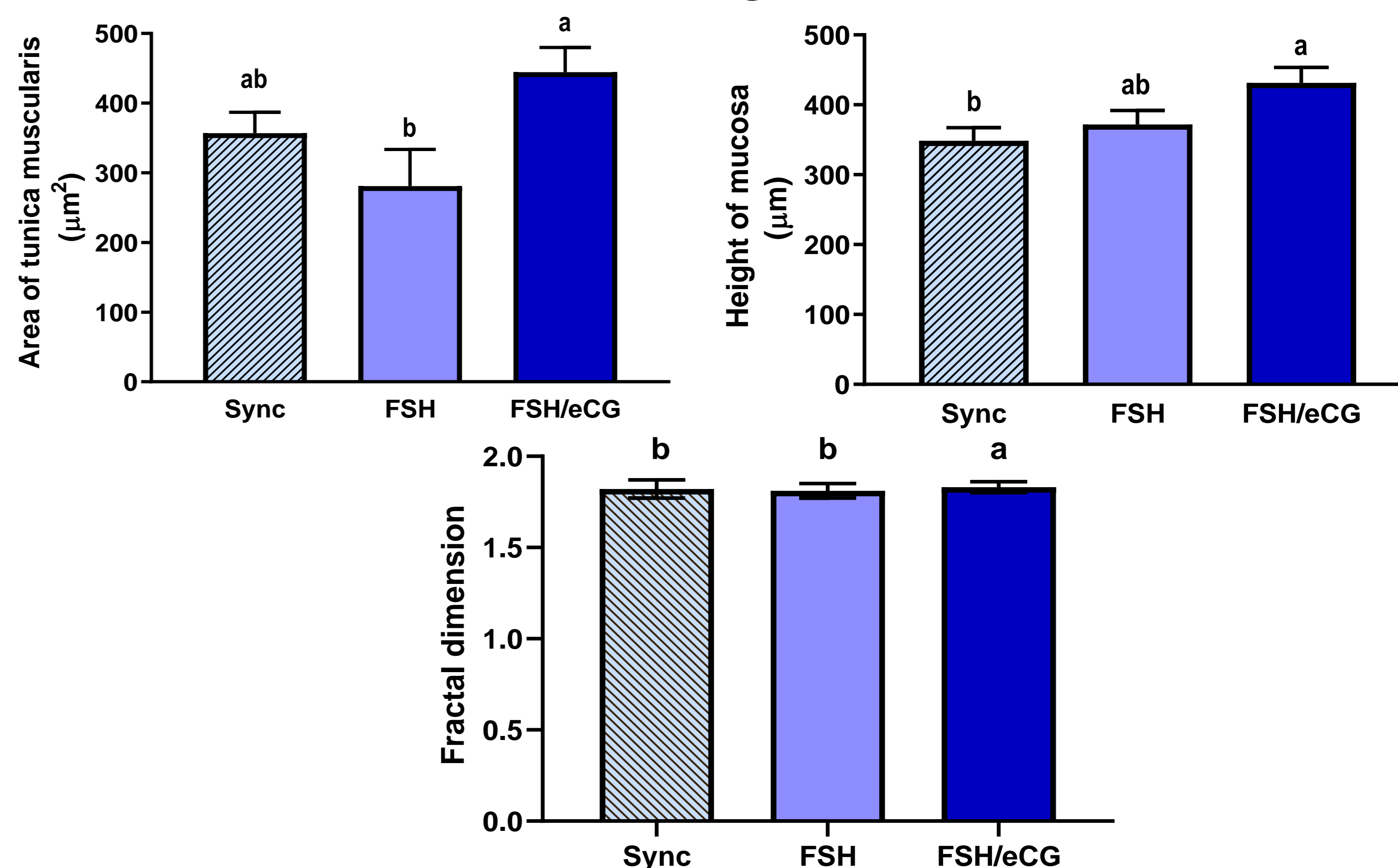


Figure 2. In the ampulla, use of FSH/eCG was able to increase the area of the muscle layer of the oviduct ($p=0.04$), as well as the height of the mucosa ($p=0.02$). Regarding, fractal analysis, OVS decrease fractal values in the ampulla ($p=0.0116$).

CONCLUSION

We figure out that superstimulatory approach of FSH combined with eCG modifies the ampulla and isthmus stereological phenotype in divergent ways in the bovine oviduct. Furthermore, we suggest that alterations on fractal analysis caused by OVS could impacts changes on extracellular matrix remodeling.

STATISTICAL ANALYSIS: The effect of OVS on the stereological characteristics and fractal dimension of the bovine oviduct was investigated by parametric ANOVA. Means were compared by Tukey-Kramer test. Differences were considered significant when $P < 0.05$.