Disturbed testicular expression of the estrogen-metabolizing enzymes CYP1A1 and COMT in infertile men with primary spermatogenic failure: possible negative implications on Sertoli cells

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© 2017 American Society of Andrology and European Academy of Andrology Estradiol (E2) is normally metabolized to hydroxyestradiols and methoxyestradiols by CYP1A1, CYP1B1 and COMT. However, an altered production of these metabolites by a disturbed expression of these enzymes is associated with reproductive and non-reproductive pathologies. In vitro studies suggest that increased hydroxyestradiols and methoxyestradiols intratesticular generation is related to male infertility, but no studies have explored whether infertile men have a disturbed testicular expression of the enzymes that generate these E2 metabolites. The aim of this study was to assess CYP1A1, CYP1B1 and COMT testicular expression at mRNA and protein level in men with spermatogenic impairment. Seventeen men with primary spermatogenic failure (13 with Sertoli cell-only syndrome and four with maturation arrest) and nine controls with normal spermatogenesis were subjected to testicular biopsy. mRNA was quantified using real-