

SUMMARY

Anti-Müllerian hormone expression in endometrial cancer tissue.

Abstract

Introduction: Anti-Müllerian hormone (AMH) is a commonly known factor secreted by Sertoli cells of the testes, which is responsible for regression of the Müllerian ducts in male fetuses. AMH has multiple functions in human organism. *In vivo* and *in vitro* studies shown that AMH induces cell cycle arrest and apoptosis in cells of cancers with AMH receptors.

The aim of the present study was to answer the following questions:

1. Does the tissue of pre-cancerous states of endometrium (PCS) and various histopathologic types of endometrial cancer (EC) exhibit the presence of AMH ?
2. Does the potential presence of the AMH protein concern postmenopausal women or those regularly menstruating ?
3. Is a presence of AMH related to cancers with a good prognosis or those with a poor prognosis ?
4. What other factors may influence AMH expression ?

Materials and methods: The undertaken analysis was performed on tissues retrieved from 232 women who underwent surgical procedures due to PCS and EC at the Regional Specialist Hospital in Olsztyn, a tertiary reference regional center for operative treatment of gynecologic cancers, between 2006 and 2010. Three samples of uterine tissue from each patient were subjected to immunohistochemical (IHC) determinations using of a novel method of tissue microarrays (TMAs), with up to 250 representative cores placed on one glass slide. Due to such an approach, the IHC reaction was performed in exactly the same experimental conditions for every patient additionally raising the value of the research.

Results: AMH expression was confirmed in 23 patients; these were patients with non-atypical hyperplasia, well differentiated (G1) and moderately differentiated (G2) type of EC, and clear cell carcinoma. In the latter case, the clinical stage of the clear cell cancers according to FIGO ranged from IA to IB. AMH was not found in EC tissues of regularly menstruating women. An appropriately long mean period of breastfeeding in line with a prolonged period of sex-hormone activity (40 or more years of menstruation) had a positive effect on AMH expression.

Concluding remarks: AMH was demonstrated in cancers of better prognosis and in unadvanced Bokhman's type II cancers. AMH may be a factor protecting from the development of cancer. This is concluded from the lack of AMH in the vast majority of the analyzed EC tissues including all premenopausal patients.