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Anti mullerian hormone concentration in female dogs with and without ovarian disorders

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Anti mullerian hormone (AMH) is produced in the ovarian follicles of adult females. It has been shown that the serum concentration differs between intact and castrated bitches [1; 2]. In women AMH is used as a marker for the ovarian reserve in cases of assisted reproduction. In mice the AMH concentration declines with age [3]. Investigations about AMH concentration in female dogs include only young dogs and there is still no information regarding AMH concentration in older bitches. We examined 14 bitches of different breed and age (4-12y.). They were presented because of CEH-Pyometra-Complex (8), alterations of the oestrous cycle (4) or cysts of the ovaries diagnosed via ultrasound (2). All bitches were subjected to ovariohysterectomy under general anaesthesia and afterwards a histopathological examination was performed. At the time of surgery a blood sample was collected to determine AMH concentration in the serum with an ELISA-test (Beckman Coulter Ireland Inc.). In this test concentrations above 0.5ng/ml are found in intact bitches and concentrations below 0.02 are found in spayed bitches. The AMH concentration of 8 out of 14 bitches was below 0.5ng/ml (mean value 0.28ng/ml; range 0.18-0.39). The mean age of these bitches was 9.1 years (range 4-12y.). Six bitches (6/14) had an AMH concentration above 0.5ng/ml (mean value 0.97ng/ml; range 0.51-1.75ng/ml). The mean age of these 6 bitches was 8.8 years (range 6-12y.). Five (5/14) bitches had normal ovaries (mean AMH 0.50 ng/ml) and 9 (9/14) bitches had pathological findings (mean AMH 0.61 ng/ml). Pathological findings were cystic ovaries (2 bitches), cystic ovaries combined with hyperplasia of the granulosa cells (1 bitch), ovarian carcinoma (4 bitches), adenoma of the rete ovarii (1 bitch) and a small granulosa cell tumor (1 bitch). All AMH concentrations were above the concentration of castrated bitches, irrespective of the ovarian status. In 8 bitches the AMH concentration was below the concentration as described previously for intact bitches with this ELISA-test. These results demonstrate that more data are necessary to establish cut off levels for intact bitches. In our study ovarian alterations were not related to AMH concentration. Further investigations are needed to elucidate the influence of age and ovarian disorders on AMH concentrations.