

The identification of two subgroups of obese women with differing endometrial proliferation levels: Potential consequences in the development of endometrial cancer

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Enhanced endometrial proliferation correlates obesity to type-I (estrogen-dependent) endometrial cancer (EC). Our aim was to distinguish obese women (without EC) with differing endometrial proliferation. Endometrial and blood samples were obtained from normal-weight and obese women without EC. Type-I EC samples were obtained from obese patients. On measuring endometrial proliferation (Ki67 and phosphorylated histone H3 (p-H3)), two groups of obese women without EC were identified: obeseHigh Proliferating (OHP) and obeseLow Proliferating (OLP). Increased Ki67 (88.5%, $P < 0.001$), p-H3 (62.6%, $P < 0.01$), 17 β -estradiol/ progesterone ratio (46.3%, $P < 0.01$) and endometrial estrogen receptor alpha (ER α) (82.2%, $P < 0.001$) were observed in OHP compared with OLP patients. ECs possessed similar ER α and enhanced proliferation as OHP, suggesting that OHP women are at higher risk of type-I EC. OLP women were indistinguishable from normal-weight women regarding these determinants of endometrial proliferat