THE IMPACT OF ESTROGEN DEPLETION VIA AROMATASE INHIBITORS ON ADIPONECTIN SERUM LEVELS IN POSTMENOPAUSAL PATIENTS WITH BREAST CANCER


Background
Adiponectin impacts on breast cancer risk and prognosis. Obesity and insulin resistance are correlated with low adiponectin serum levels, which increase breast cancer risk and lead to a worse outcome regarding breast cancer. Additionally a cross talk between the adiponectin and estrogen signaling system has been suggested. Here we prospectively investigated the impact of estrogen depletion via aromatase inhibitors (AI) on adiponectin serum levels in postmenopausal patients with breast cancer.

Methods
68 postmenopausal ER positive patients with breast cancer, scheduled to receive anastrozole or letrozole as adjuvant endocrine treatment were prospectively included in this study. Serum was taken before (T1) and 3 months after start with aromatase inhibitors (T2). Non-fasting serum levels of adiponectin, FSH, LH, E2, glucose and insulin were analyzed immediately in the clinical routine lab and in a dedicated central lab able to measure E2 in serum at low concentrations with high sensitivity.

Results
At baseline, a strong significant negative correlation between adiponectin and BMI as well as a positive correlation between adiponectin and FSH serum levels could be observed ($r=-0.43$, $p=0.01$ and $r=0.38$, $p=0.03$, respectively). Taking the previously proposed cut off of 15.5\(\mu\)g/ml, patients with low adiponectin serum levels had a significantly higher BMI and significantly lower FSH serum levels. No interaction between adiponectin and estradiol serum levels could be detected. As previously shown, AI treatment significantly decreased estradiol serum levels and consequently increased FSH serum levels. However, 3 months of AI treatment did not alter adiponectin, insulin and c-peptide serum levels, respectively.

Conclusion
Short term estrogen depletion via aromatase inhibitors does not impact on non-fasting adiponectin, insulin and c-peptide serum levels in postmenopausal patients with breast cancer.