

4th World Congress on
Cancer Science & Therapy
October 20-22, 2014 DoubleTree by Hilton Hotel Chicago-North Shore Conference Center, USA

The role of SLC transporters in prognosis of breast carcinoma patients

Hlavac V^{1,6}, Brynychová V^{1,6}, Vaclavikova R¹, Ehrlichova M¹, Vrana D^{1,5}, Pecha V², Trnkova M³, Kodet R⁴, Mrhalová M⁴, Kubáčková K⁴, Gut I¹ and Soucek P¹

¹National Institute of Public Health, Czech Republic

²Medicon, Czech Republic

³Biolab Praha, Ltd., Czech Republic

⁴Motol University Hospital, Czech Republic

⁵Palacky University Medical School and Teaching Hospital, Czech Republic

⁶Charles University, Czech Republic

Breast cancer is the second most common cancer in women worldwide. Solute carrier (SLC) transporters can confer to multi-drug resistance via decreased influx of anticancer drugs. The aim of our study was to evaluate expression of SLC transporters in order to find markers of prognosis and/or response of the patients to chemotherapy. Expression profile of twenty-one human SLC transporters was evaluated in 33 post-treatment tumor tissue samples from patients treated by neoadjuvant chemotherapy regimens based on 5-fluorouracil, anthracycline and/or taxanes and in 50 tumor tissue samples taken from patients prior to any treatment. Paired non-tumor control tissues were available from a subset of the patients. SLC19A1 was significantly overexpressed and SLC22A3, SLC47A2, and SLCO1A2 were significantly downregulated in tumors compared with non-tumor control tissues after correction for multiple testing in both sets of patients. Significant association of SLC46A1 transcript levels in tumors with expression of estrogen receptor was found in both sets. Patients with high SLC19A1 levels in the post-treatment set had significantly shorter disease-free survival than patients with low levels. Patients with partial response to neoadjuvant chemotherapy (e.g. responders) had significantly higher intratumoral levels of SLCO1A2 than patients with stable disease or progression (e.g. non-responders). Protein expression of SLCO1A2 was found in tumors but it did not correlate with the transcript levels. SLCO1A2, SLC46A1, and SLC19A1 should be further followed as putative prognostic and predictive biomarkers in breast carcinoma patients.

Biography

Hlaváč V is PhD student at the Third Faculty of Medicine at Charles University in Prague, Czech Republic. He is simultaneously a staff member of the Department of Toxicogenomics in National Institute of Public Health in Prague. He has published four papers in impacted journals regarding his PhD. He regularly attends international congresses and meetings. His major interest is study of biomarkers for individualization of cancer treatment both in patients and *in vitro* models.

viktor.hlavac@szu.cz