

International Conference on **Epilepsy & Treatment**

September 21-22, 2015 Baltimore, USA

Effects of anti-epileptic drugs on carriers for drugs, hormones and nutrients: Implications for fetal exposure

Sara Eyal

Hebrew University of Jerusalem, Israel

Our aim is to explore a novel mechanism of potential teratogenicity of Anti-Epileptic Drugs (AEDs), altered expression of placental and systemic carriers for hormones, nutrients and medications. We have recently demonstrated that AEDs affect the expression of folate placental uptake carriers (reduced folate carrier-RFC, folate receptor α -FR α) and efflux transporters (breast cancer resistance protein-BCRP and multidrug resistance protein 2) and thyroid hormones uptake transporters (L-type amino acid transporter-LAT1 and organic anion transporting polypeptides-OATPs) in a human placental cell line. Our findings from studies in mice provide further evidence for additional effects of AEDs on fetal exposure to xenobiotics through modification of their systemic pharmacokinetics. Identification of AED effects on the placental barrier and fetal exposure to xenobiotics and endogenous compounds could be a first step towards a more rational pharmacotherapy and supplemental therapy in pregnant women with epilepsy.

Biography

Sara Eyal has completed her PhD from the Hebrew University and Postdoctoral studies from The University of Washington. She is a Senior Lecturer at the Hebrew University's Institute for Drug Research and the Head of Research of the University's PharmD program. She has published more than 25 papers in reputed journals and has been serving as an Editorial Board Member of *Frontiers in Pharmacology: Drug Metabolism and Transport*.

sarae@ekmd.huji.ac.il

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