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## Stem/progenitor cells in human milk and relations between number of cells in human milk and breastfeeding mother-infant dyad

Dzwigala M E<sup>1,2</sup>, Zychowicz M<sup>2</sup>, Sarnowska A<sup>2</sup> and Romejko-Wolniewicz E<sup>1</sup>

<sup>1</sup>Medical University of Warsaw, Poland

<sup>2</sup>Mossakowski Medical Research Centre- Polish Academy of Sciences, Poland

Human breast milk consists of different types of cells: leukocytes, epithelial cells, fibroblasts and pericytes. The aim of this study was to confirm presence of stem/progenitor cells in human milk, to evaluate their pluripotent and regenerative potential and to test correlation between mother, infant and number of cells in human milk. Fresh milk samples were acquired from women 0-7 days post-delivery. The consent according to the Ethics Committee of Warsaw Medical University guideline was obtained from each woman. The samples were collected manually or by breast pump from 47 mothers. Cells isolation was performed within 4 hours after sample collection. Various types of media were used in cells culture (MammoCult, DMEM + 10% FBS and others). Cells were characterized by flow cytometry (FC), RT-PCR and immunocytochemistry. Health status of the mother and the child was estimated. Anthropometric data was obtained from patients' history. Stem/progenitor cells present in human milk displayed heterogeneous expression of pluripotency genes characteristic for human embryonic stem cells such as: transcription factors OCT4, SOX2 and NANOG. No statistical relationship was found between number of cells in human milk and any of the following: previous surgical procedures, marital status, smoking during pregnancy, regular or irregular menstruation cycle, child's sex and others. Negative correlation ( $r=-0.5384$ ,  $p<0.0012$ ) was found between the day of sample collection and the number of milk cells. The study confirms presence of stem/progenitor cells in human breast milk and the correlations might argue the decreasing number of cells in human breast milk during first week from delivery.

### Biography

Dzwigala M E is a 5<sup>th</sup> year student of Faculty of Medicine at the Warsaw Medical University, Poland. In 2011, she received her Master of Science degree from the Warsaw School of Economics. From 2015, she started taking part in projects carried out by Students' Scientific Group in the Department of Obstetrics and Gynecology under the supervision of Assoc. prof. Ewa Romejko-Wolniewicz (Chief of Department Krzysztof Czajkowski PhD, MD) and she is also involved in basic research working in the Translative Platform for Regenerative Medicine, Medical Research Centre, Polish Academy of Sciences under supervision of Anna Samowska PhD, MD (Chief of the Platform of Regenerative Medicine in Polish Academy of Sciences). She is interested in the Stem Cell Biology field, especially human mesenchymal stem cells, human placenta stem cells, human breast stem cells and cervical cancer stem cells. In the area of obstetrics and gynecology, she is involved in the research concerning pregnancy programming, intrauterine infection, amniotic fluid microbiome, pregnancy diabetes and hypertension, perinatology.

monica.dzwigala@gmail.com

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