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Correlation between neutrophil gelatinase-associate lipocalin (NGAL) and lactoferrin in the fetal intestine

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Numerous proteins in neutrophil granules are the mediators of their biological functions. NGAL and lactoferrin are components of secondary neutrophil granules released by activation of the granulocyte. The diagnostic significance of NGAL and lactoferrin in the fetal intestine has not been yet established. The aim of the study was to assess the concentrations of these proteins in meconium, which is the intestine-specific material, formed during the intrauterine development. The concentrations of NGAL and lactoferrin were measured using commercial ELISA test kits (Immunodiagnostic AG) in serial meconium portions (n=81) collected from 20 healthy full-term neonates. The mean (±SD) concentration of lactoferrin [μg/g] was 45.07±78.53 and that of NGAL [ng/g] 1.93±2.46, with the correlation between them r=0.50; p<0.0001. In meconium samples with the concentrations of lactoferrin <25 μg/g (n=45) no correlation was found between lactoferrin and NGAL (r=0.093; p=0.55) while in meconium samples (n=36) with lactoferrin >25 μg/g, the correlation was r=0.83; p<0.0001. The total intestinal accumulation of lactoferrin [mg] and NGAL [μg] in the developing fetus, i.e. the sum of their measurements in serial meconium portions, was 0.76±0.75 and 0.028±0.021 respectively, with correlation r=0.65, p=0.0018. The findings indicate that meconium lactoferrin and NGAL measurements may provide information about neutrophil activation in the fetal intestine. Meconium lactoferrin exceeding 25 μg/g associated with significantly increased NGAL concentrations suggests that the same stimuli may induce both parameters. Further studies are required to elucidate the physiological role played by NGAL and lactoferrin in the fetal intestine *in utero* and after birth and establish their diagnostic role as biological markers.

Biography

Barbara Lisowska Myjak is an Assistant Professor in Medical University of Warsaw, Faculty of Pharmacy, Department of Biochemistry and Clinical Chemistry. She is an author of more than 40 papers in reputed journals along with it manager of 2 projects. She is also included in the international database of medical peer-reviewers.

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