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EVOLIUCINĖ MEDICINA: ŽMOGAUS RAIDOS PERSPEKTYVOS IR SVEIKATA BESIKEIČIANČIOJE APLINKOJE

EVOLUTIONARY MEDICINE: PERSPECTIVES ON HUMAN DEVELOPMENT AND HEALTH CONSEQUENCES IN A CHANGING ENVIRONMENT

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THE INFLUENCE OF FOETAL SEX ON THE FREQUENCY OF PREGNANCY COMPLICATIONS AND MODE OF DELIVERY

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Background and Aim: Foetal sex is gaining recognition as an independent determinant of pregnancy course and complications; yet no such studies have been conducted in Lithuania. This study examines associations between foetal sex and the most common pregnancy complications, caesarean section, and instrumental delivery, analysing 1995–2022 Lithuanian data.
Materials and Methods: A retrospective population-based analysis of Lithuanian Medical Birth Registry data (1995–2022) was performed, selecting cases meeting at least one defined criterion: maternal pre-eclampsia, eclampsia, gestational diabetes, placenta praevia or complicated delivery (elective or emergency caesarean section, forceps, vacuum extraction). Statistical analyses were performed in Python programming language: comparative methods were applied to identify associations with foetal sex, and logistic regression was used to assess the independent effect of sex after adjusting for neonatal weight, length, and head circumference (the latter available since 2001).
Results: Of 843,474 neonates born in 1995–2022, 196,688 met the criteria (53.54% boys). Delivery mode was analysed in 167,576 (53.85% boys) and complications in 43,321 cases (52.28% boys). Caesarean section (19.43% vs 17.92%), forceps delivery (0.22% vs 0.14%), and vacuum extraction (1.25% vs 0.86%) were more frequent among male neonates ($p<0.001$). Elective caesarean section predominated among female neonates (6.40% vs 6.19%, $p<0.01$) and emergency caesarean among males (11.90% vs 10.37%, $p<0.001$). Neonatal weight, length, and head circumference also influenced complicated delivery, yet male sex retained significance after adjustment. The prevalence of pregnancy complications did not differ by foetal sex except for gestational diabetes (4.31% in pregnancies with boys vs 4.09% with girls, $p<0.001$).
Conclusions: Male foetal sex was associated with higher rates of caesarean section and instrumental delivery, independent of neonatal anthropometric measurements. The prevalence of pregnancy complications did not differ by foetal sex, except for a slightly higher frequency of gestational diabetes in pregnancies with male foetuses.

Keywords: delivery methods, foetal sex, pregnancy complications