

INFLUENCE OF SEX ON BIRTHWEIGHT DISCORDANCE IN TWIN PAIRS

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For further verification of the relationship of birthweight discordance with the sex of newborn, 669 unlike-sexed twin pairs were studied. In both male-first (n=327) and female-first (n=342) pairs, males were heavier in mean birthweight but the difference was found to be statistically significant ($p < 0.01$) only in case of male-first combination. When comparison of rate of discordance in birthweight between male-first and female-first twins of unlike sex was considered, the female member of the twin pairs showed higher rate of discordance in birthweight indicating that the birthweight of female child was less than its male co-twin. The females were more discordant (lighter) than males in male-first and female-first groups ($\chi_1^2 = 7.49, p < 0.01$). Equality of intrapair birthweight both in like sexed male (n=250) and female (n=250) twin pairs and statistically significant difference in mean birthweight between singleton of both sexes ($t_{999} = 7.84, p < 0.01$) were suggestive of role of Y chromosome in it. We seek explanation of gender difference from current understanding of molecular basis of Y chromosome and speculate six palindromes carrying recognized protein encoding genes which seem to be expressed specifically to testis for its development and function. It is concluded that sex hormone action might explain the differences in birthweight.

Keywords : Sex influence, Birthweight discordance, Twins, Molecular basis
