TRISOMY 21, 18, AND 13 IN TEXAS: PREVALENCE AND MORTALITY STUDY

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Trisomy 21, 18, and 13 are the three most common trisomies in humans. Overall information about birth prevalence, natural history and mortality for all three trisomies is well defined but ethnic-specific information is limited. In addition, few studies have examined mortality rates of trisomies 18 and 13 because so few cases are liveborn and most liveborns have very short life spans. Our study aims were to determine for each trisomy, overall and ethnic-specific (1) birth prevalence rates, (2) mortality rates and (3) maternal age rates. All cases of trisomy 21, 18, and 13 born in Texas between 1999-2003 were obtained from the Texas Birth Defects Registry and included 2260 cases of trisomy 21, 398 cases of trisomy 18, and 213 cases of trisomy 13. Date and causes of deaths were obtained from the Texas vital statistics records and the National Death Index. Prevalence rates (per 10,000 adjusted live births) for the three trisomies were 11.74 (95% CI: 11.25-12.25), 1.34 (95% CI: 1.18-1.52), 0.92 (95% CI: 0.79-1.07), respectively, and are consistent with previously reported rates. For trisomy 21, Whites had a higher prevalence rate than Blacks and Other and a lower rate than Hispanics. Whites had a lower birth prevalence rate than all other trisomies for both trisomy 18 and 13. Increased birth prevalence rate was associated with advancing maternal age for in each trisomy and for each ethnic group. Survival analysis showed no differences in survival rates by ethnic group. Median survival for each trisomy was consistent with previous reports. Although 97% of trisomy 21 cases survive, the most common cause of death in those individuals who died was circulatory system problems. For trisomies 18 and 13, the syndromes themselves were noted to be the most reported cause of death. The results of this study provide comprehensive population-based information for trisomies 21, 18 and 13. Further studies should continue to evaluate the reasons behind the differences in birth prevalence rates between Whites and other ethnic groups.