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65

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Cytogenetics/Microarray

**Title:**
22q11.2 deletion as a genetic model for multimorbidity in young adults

**Abstract:**

**BACKGROUND:** Multimorbidity is increasing in younger adults but is understudied in the general population. 22q11.2 deletion syndrome (22q11.2DS) could act as a genetic model of multimorbidity in young to middle-aged adults. **METHODS:** Using Anatomic Therapeutic Classification (ATC) and setting 5 or more concurrent prescription medications as a proxy for multimorbidity, we compared data on 264 adults with 22q11.2DS (median age 27.8, range 17.3-68.3 years) to that for a community-based general population sample in Canada (n=25,287). We used logistic regression to examine possible predictors of multimorbidity in 22q11.2DS. **RESULTS:** Multimorbidity in 22q11.2DS in the 25-44 year age group (34.7%) was significantly more prevalent than in the general population, both for the same age group (2.9%, prevalence ratio, PR=11.9) and compared to those aged 45-64 years (16.4%, PR=2.1). Neuropsychiatric and endocrinological ATC medication classes predominated. Within 22q11.2DS, older age and psychotic illness, but not sex, major congenital heart disease or intellectual disability, were significant predictors of multimorbidity. **CONCLUSION:** The results indicate that adults with 22q11.2DS have a significant burden of illness with levels of multimorbidity comparable to those of the general population several decades older. In younger adults with multimorbidity, certain disease patterns may also help identify genetic disorders in “big data”.