Cannabis and Tobacco Use and Psychotic Experiences (PEs) in United Kingdom Teenagers – A Longitudinal Study

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Background
Acute cannabis intoxication causes transient PEs (1), but can prolonged use lead to PEs aside from intoxication?
Consistent association between cannabis use and PEs. Longitudinal cohort studies mean relationship unlikely to be chance or reverse causation (2).
Residual confounding – inconsistent number and quality of confounders adjusted for.
In particular tobacco use often not considered.

Methodology
Outcome: Severity of PEs at age 18 (semi structured interview)
Exposure: Cumulative cannabis use/frequency of tobacco use at age 16 (questionnaire)
Confounders: Family history and maternal education
Depression at age 12
IQ at age 8
Conduct disorder
Borderline personality
Other illicit drug use and alcohol use at age 16
Excluded all who self report PEs at age 16

Results – tobacco use (N=2050)

Unadjusted: Increased tobacco use associated with higher risk of PEs (OR=1.70, 95% CI: 1.41, 2.04).
Partial adjustment: Relationship slightly attenuated (OR=1.60, 95% CI: 1.32, 1.94) after adjustment for family history, maternal education, depression, borderline personality and conduct disorder.
Fully adjusted: Additional adjustment for cannabis, alcohol and other illicit drug use slightly attenuated the relationship (OR=1.48, 95% CI: 1.13, 1.95).

Results – cannabis use (N=2040)

Unadjusted: Increased cannabis use associated with higher risk of PEs (OR=1.64, 95% CI: 1.34, 2.01).
Partial adjustment: Relationship very similar (OR=1.63, 95% CI: 1.32, 2.01) after adjustment for family history, depression, IQ, borderline personality and conduct disorder.
Fully adjusted: Additional adjustment for tobacco and other illicit drugs attenuated the relationship (OR=1.20, 95% CI: 0.87, 1.65).

Discussion
A relationship between cannabis and PEs was initially found, which remained after adjustment for pre birth and childhood confounders.
Further adjustment for other illicit drug use and tobacco use caused the relationship to attenuate to the null. But cannabis use, tobacco use and other illicit drug use are highly correlated. 62 participants reported using cannabis not tobacco, but only 3 smoked cannabis without tobacco.
The relationship between tobacco and PEs, although initially similar, was less attenuated by additional adjustment for cannabis and other illicit drug use. Assessing the independent effects of cannabis versus tobacco is hard due to co-occurrence of use.

Conclusions
There is a complex relationship between cannabis and tobacco use and PEs, and other methods are needed to robustly test independence of effects.

Future Plans
Multiple imputation
Tobacco analysis – Mendelian Randomisation

References

The authors declare there is no conflict of interest.