1. No.
   2021G031

2. Title
   Elucidating the genetic relationships between smoking alcohol gambling and suicide risk

3. Period
   2021-2023

4. Summary
   Using Japanese largest GWAS summary statistics for several smoking status as the discovery dataset and our suicide GWAS as the target dataset, polygenic risk score (PRS) analysis demonstrated significant shared polygenic effects between cigarettes per day/age at initiation and suicide. Sex-stratified analysis revealed that rs1260326 (GCKR, p.Leu446Pro) and rs671 (ALDH2, Glu487Lys), potential functional SNPs known to be strongly related to alcohol habits in Japanese population, had significant associations with male suicide risk regardless of alcohol-induced effects. International Suicide Genetics Consortium including us and Million Veteran Program conducted the largest case-control GWAS for suicidal behavior (suicidal case N = 43,871, mostly European), and identified rs62474683, an intergenic locus on chromosome 7. Of note, this locus has already been implicated in lifetime smoking index. Genetic correlation analysis by using this consortium suicidal GWAS and publicly-available GWAS summary statistics for smoking status showed strong genetic correlation between suicidal behavior and smoking-related status, which remained significance after conditioning on MDD/PTSD.