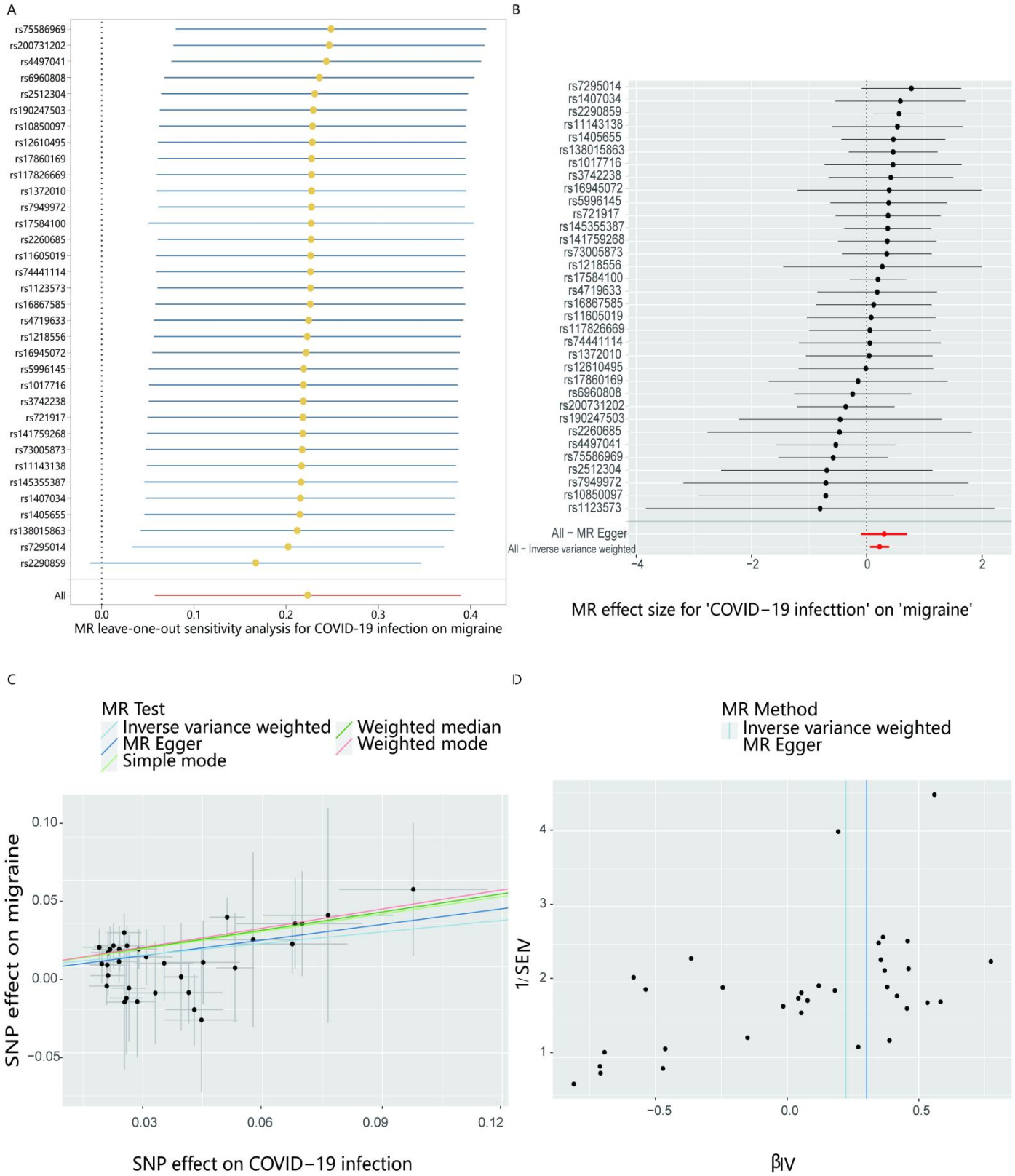


Fig. S1 The causal effect of COVID-19 infection on migraine. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

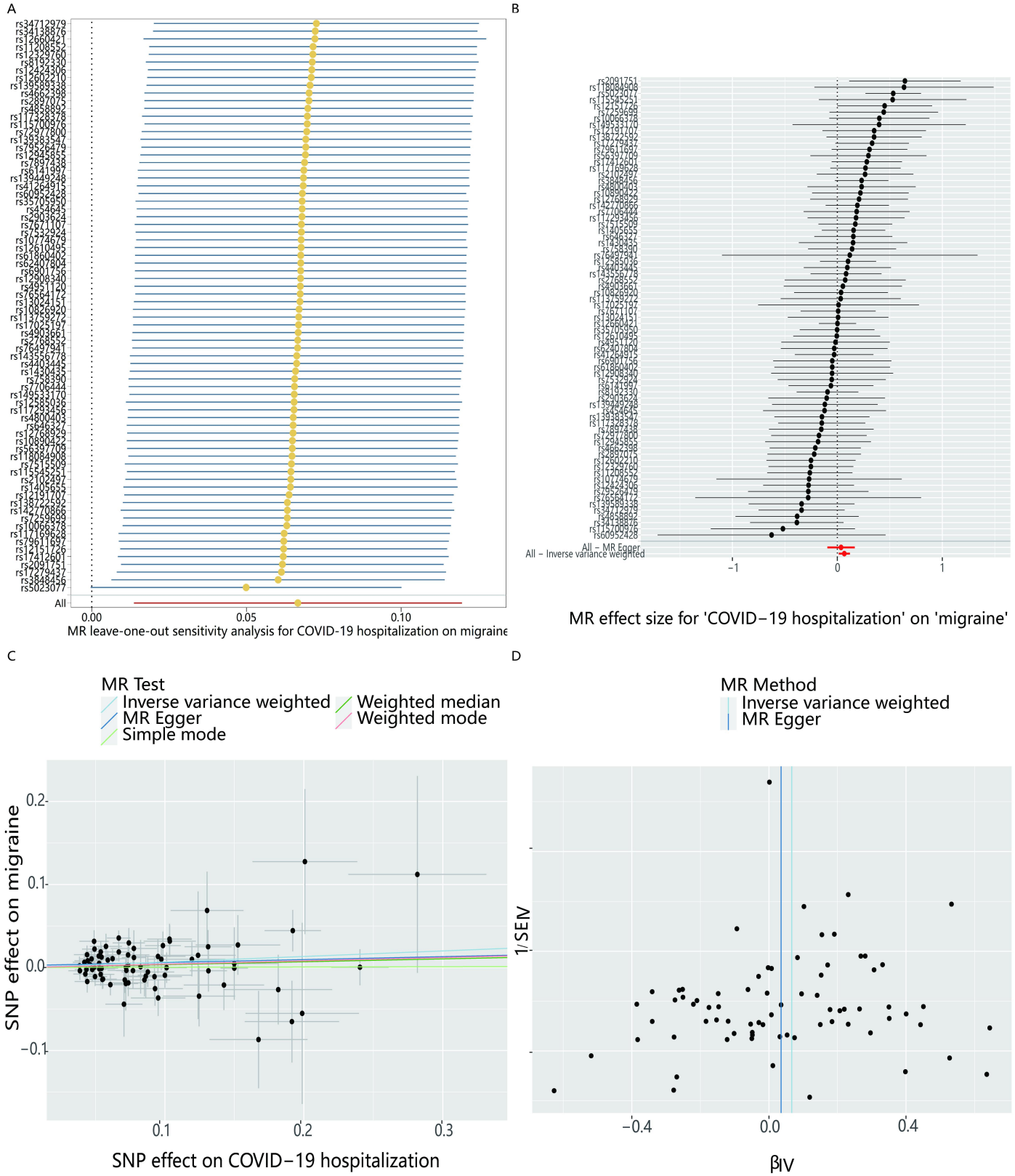


Fig. S2 The causal effect of COVID-19 infection on migraine with aura. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

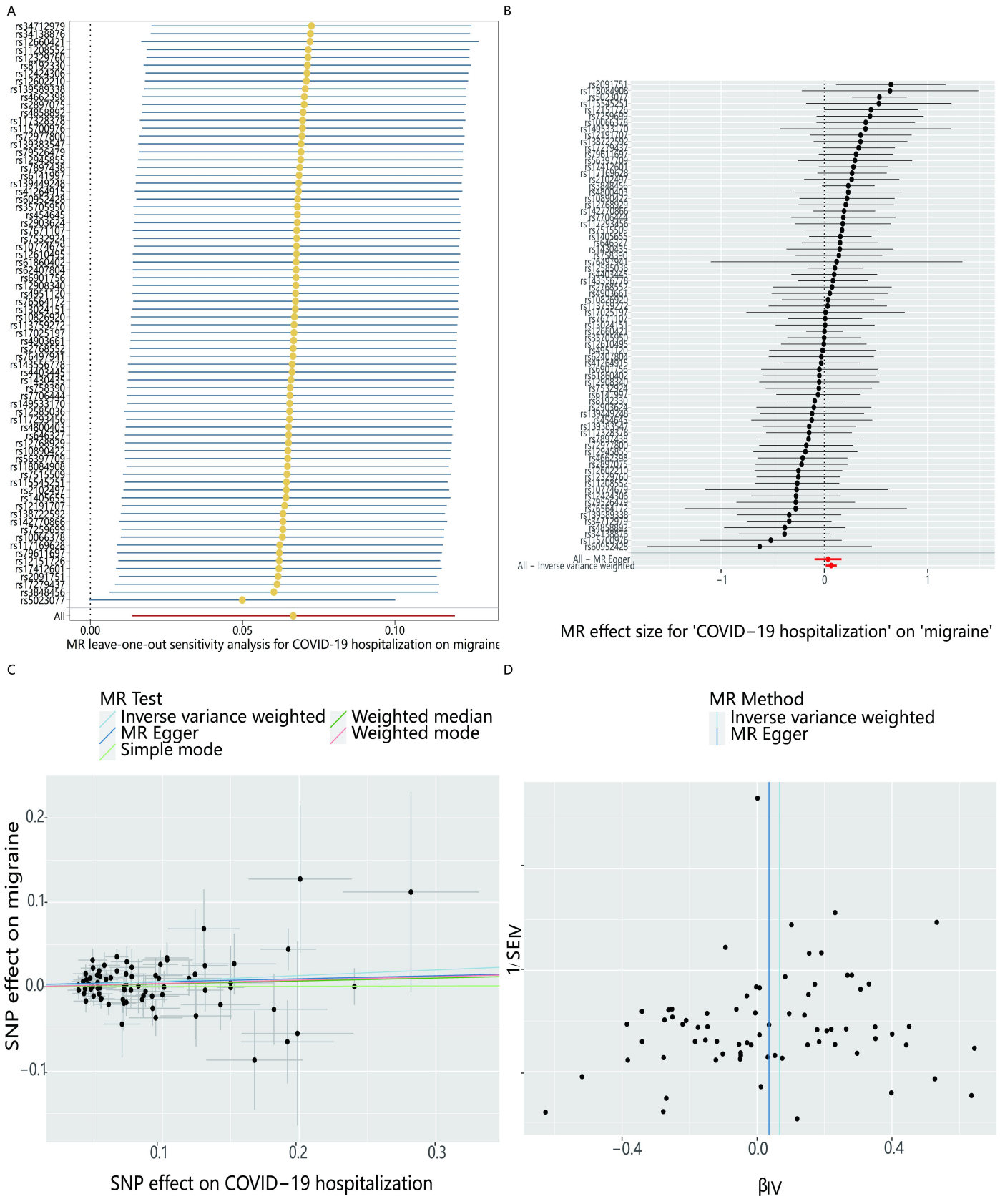


Fig. S3 The causal effect of COVID-19 hospitalization on migraine. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

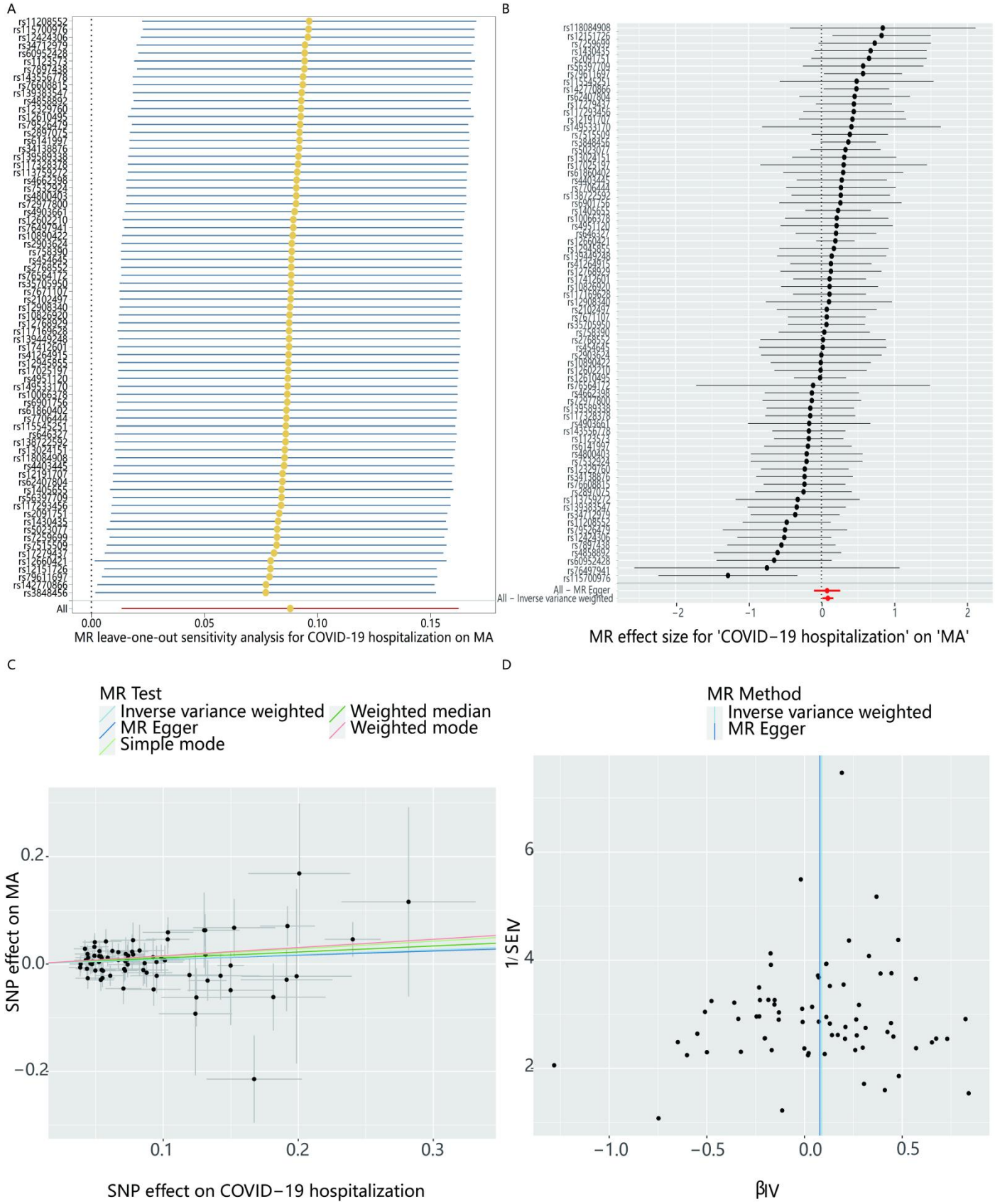


Fig. S4 The causal effect of COVID-19 hospitalization on migraine with aura. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

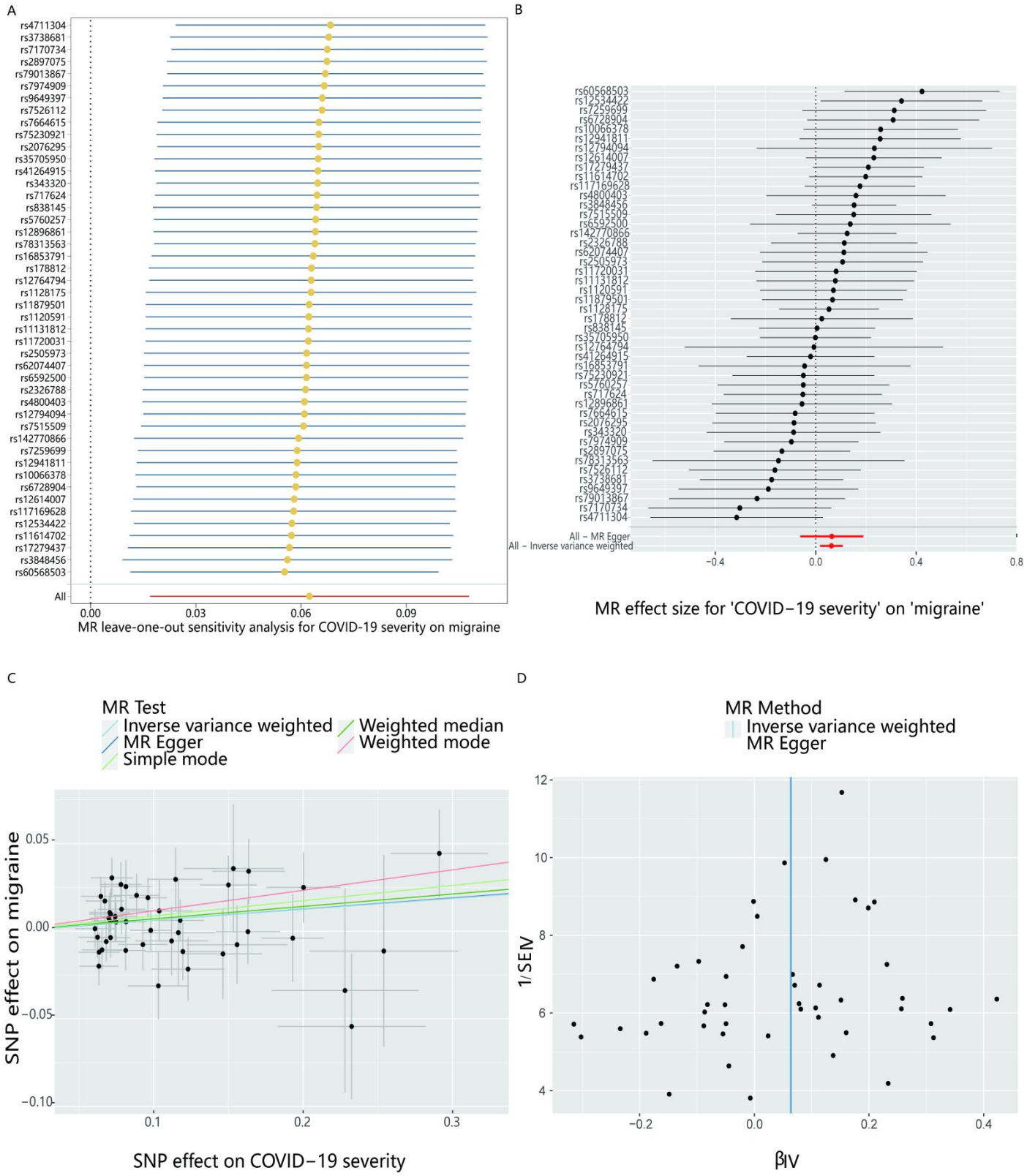


Fig. S5 The causal effect of COVID-19 severity on migraine. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

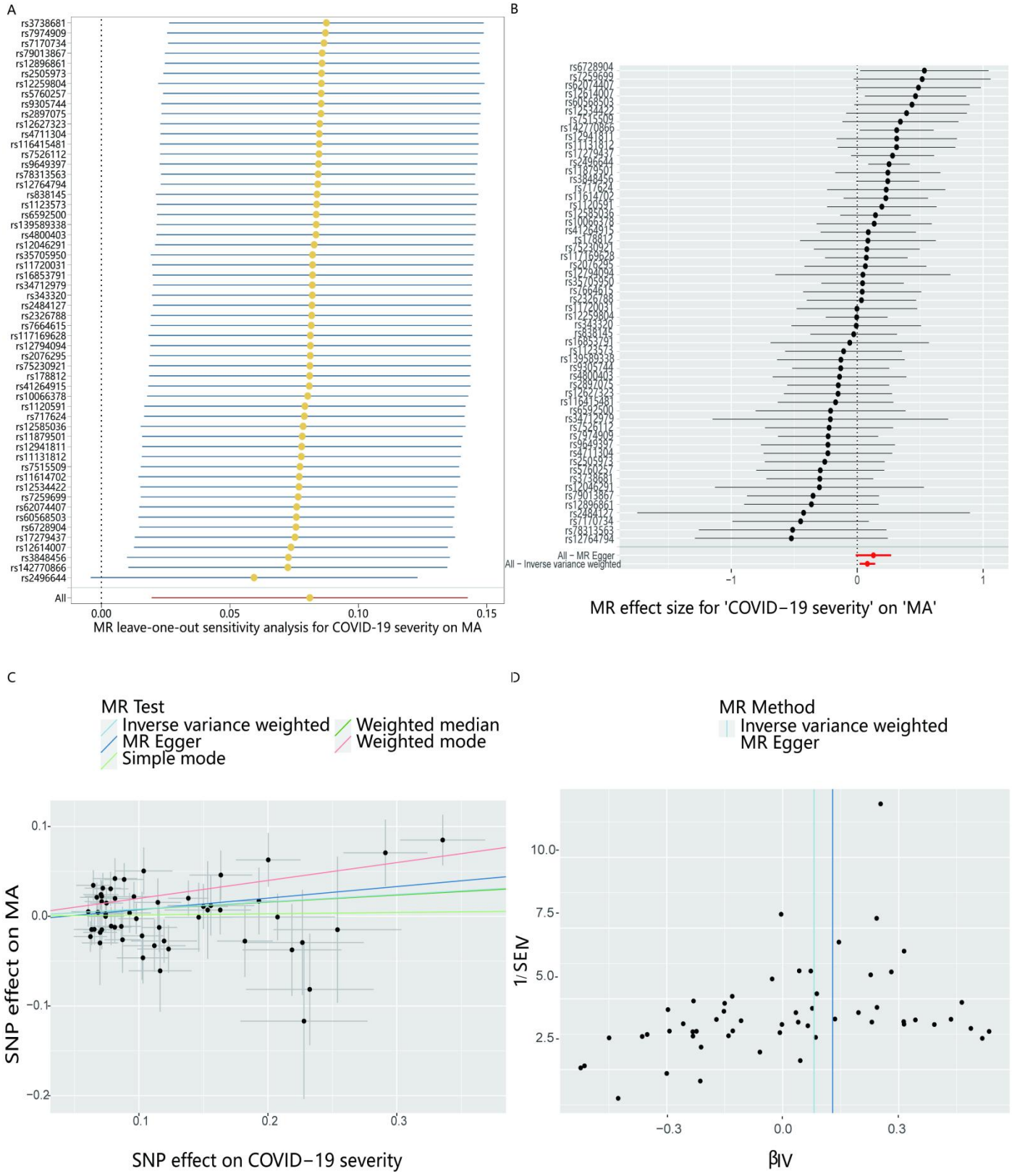


Fig. S6 The causal effect of COVID-19 severity on migraine with aura. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

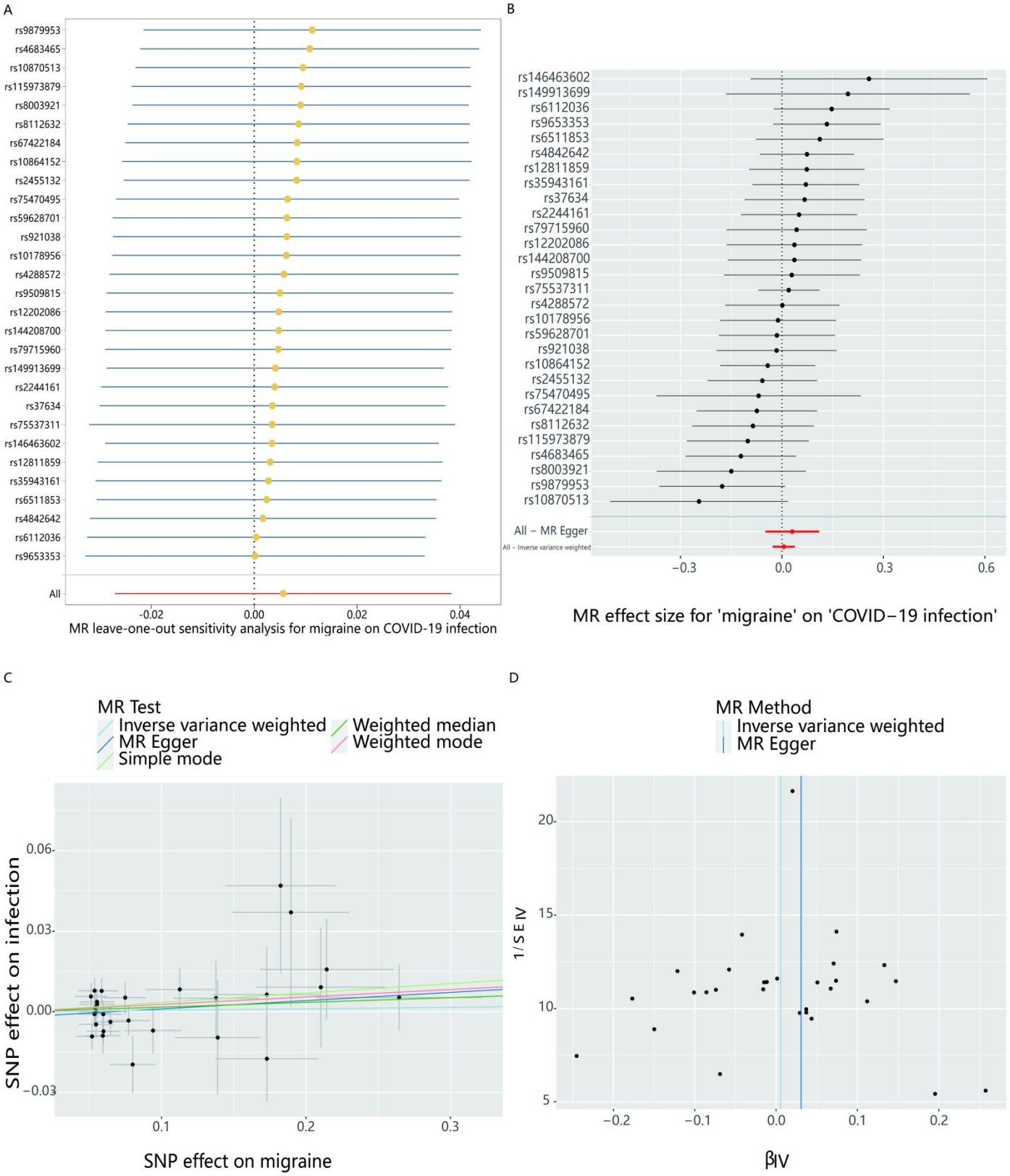


Fig. S7 The causal effect of migraine on COVID-19 infection. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

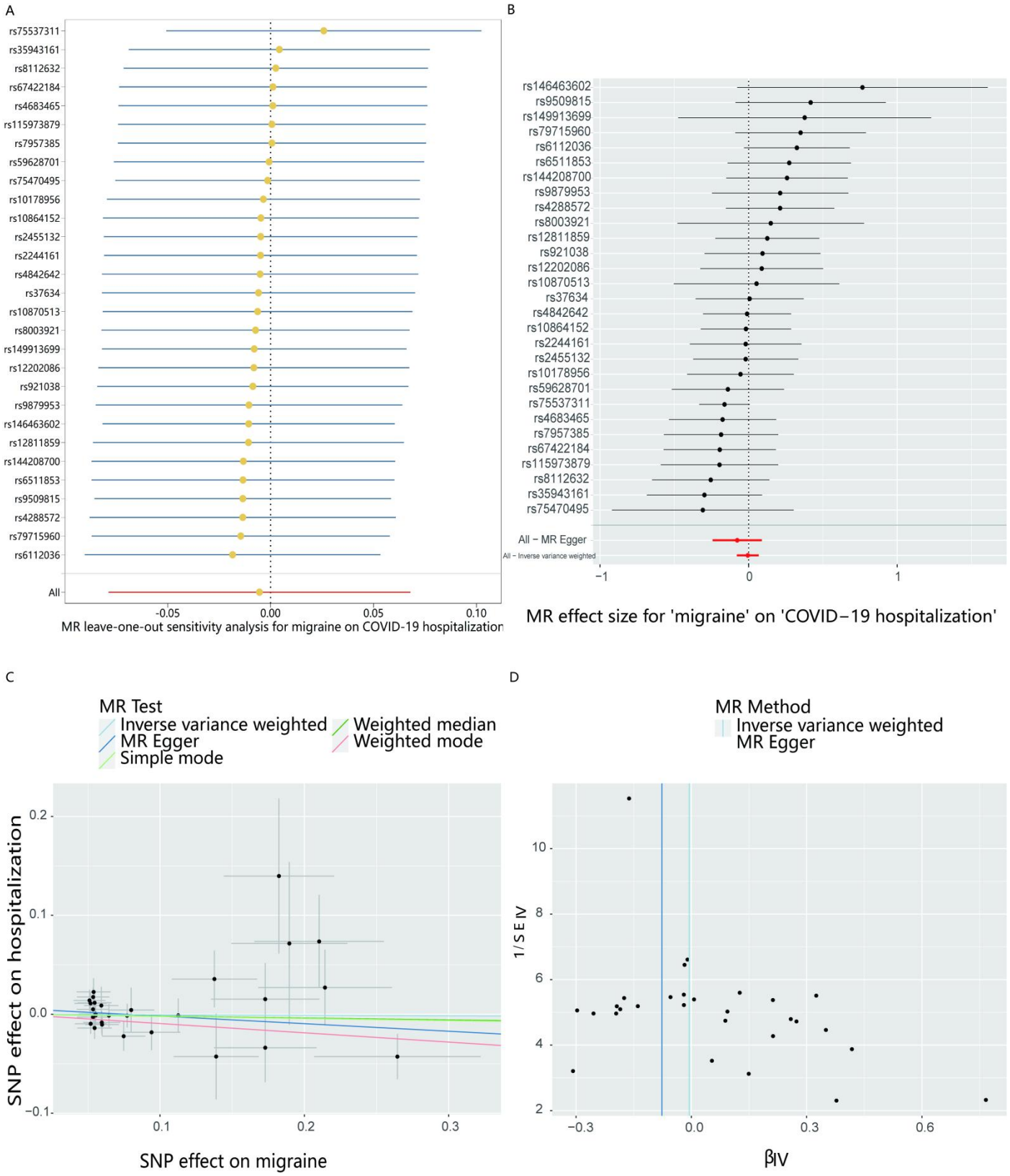


Fig. S8 The causal effect of migraine on COVID-19 hospitalization. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

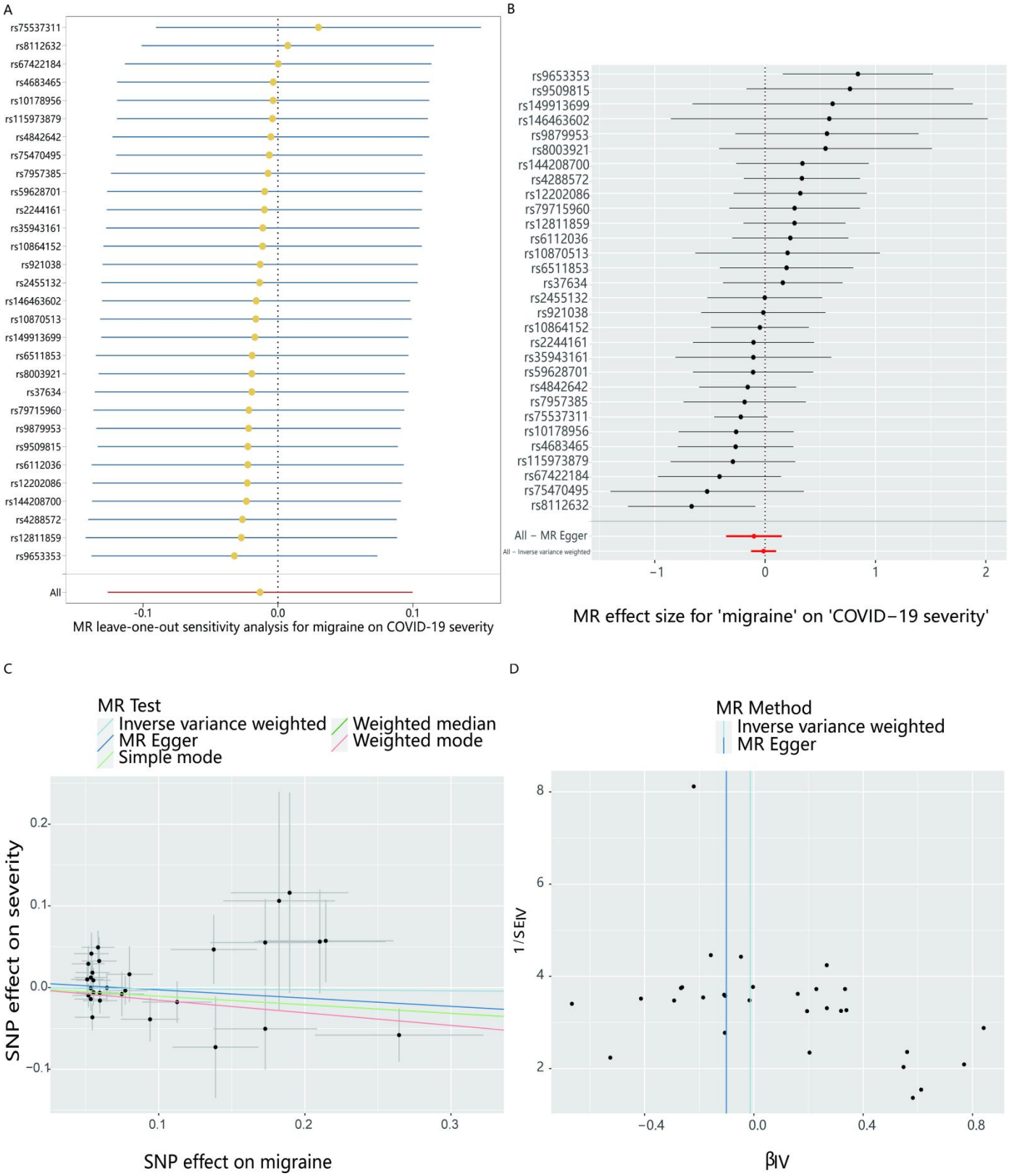


Fig. S9 The causal effect of migraine on COVID-19 severity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

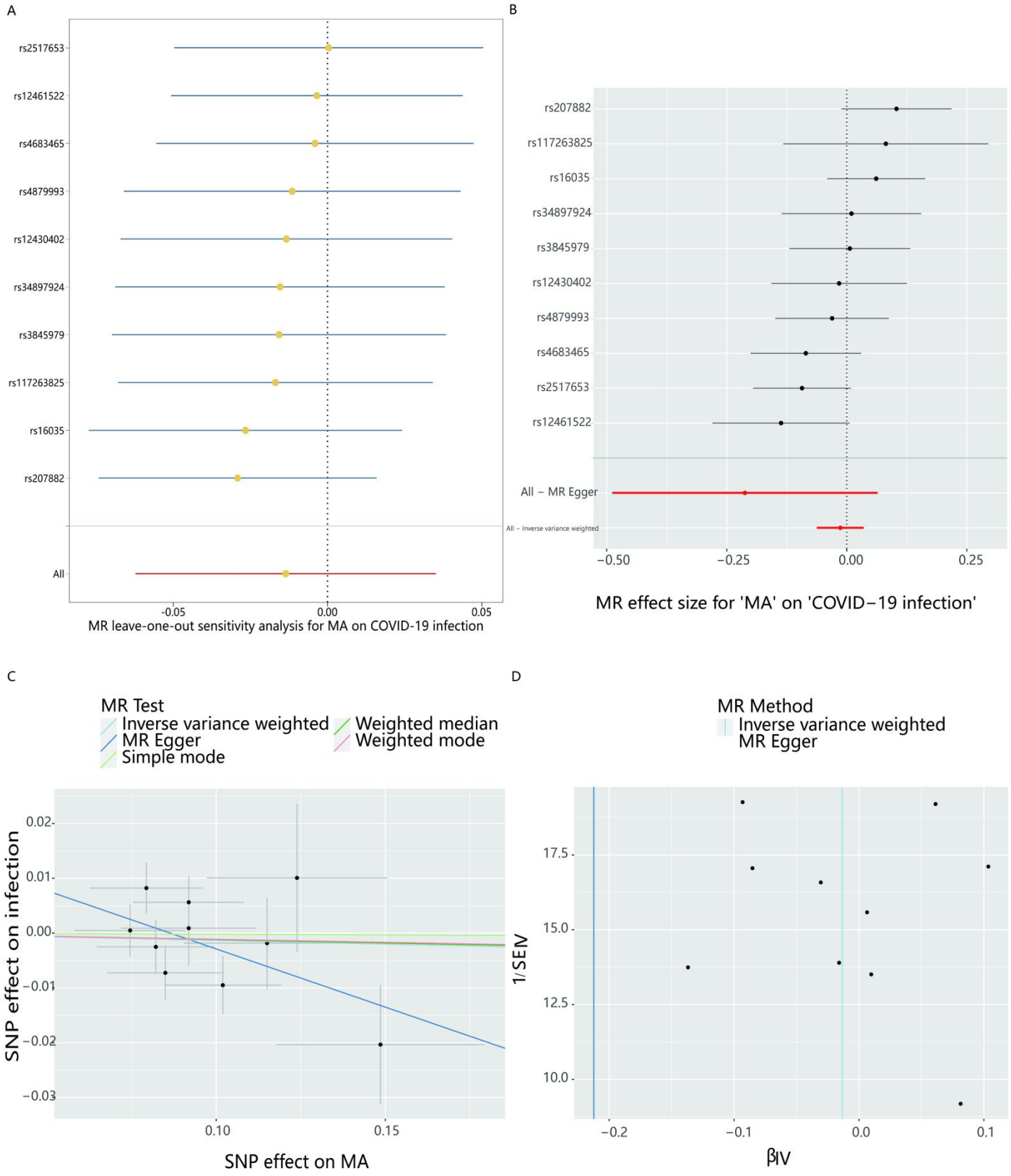


Fig. S10 The causal effect of migraine with aura on COVID-19 infection. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

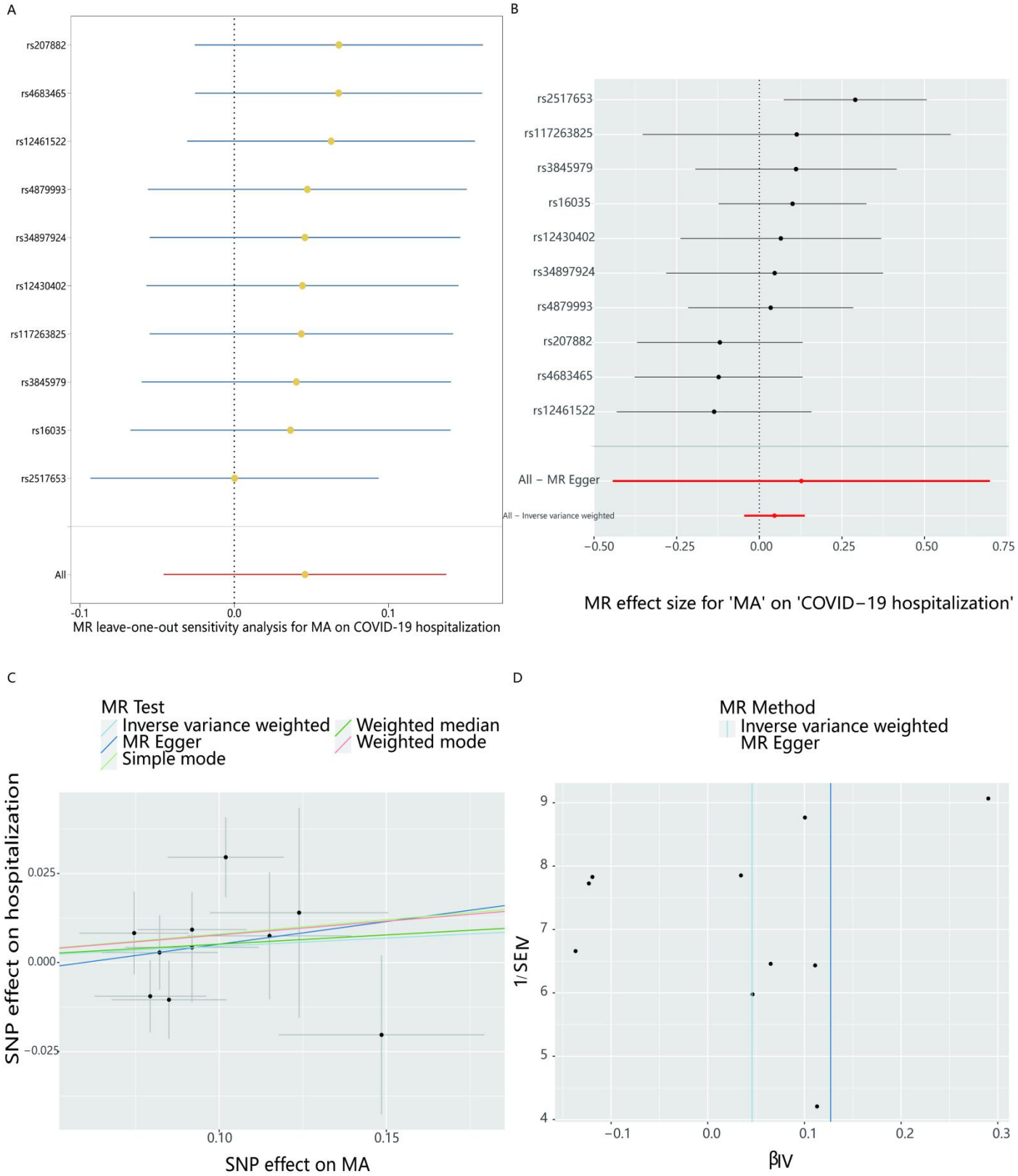


Fig. S11 The causal effect of migraine with aura on COVID-19 hospitalization. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

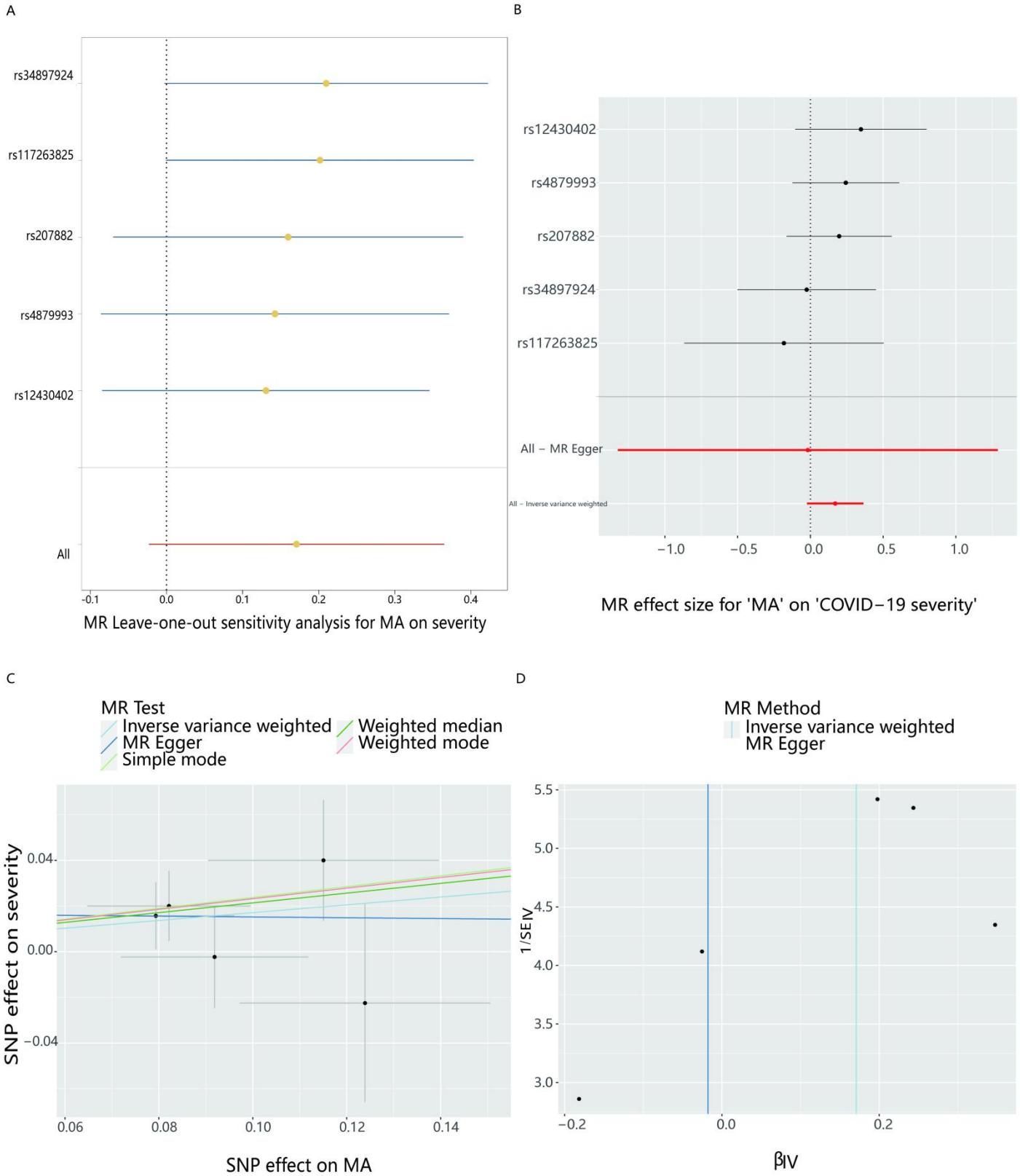


Fig. S12 The causal effect of migraine with aura on COVID-19 severity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

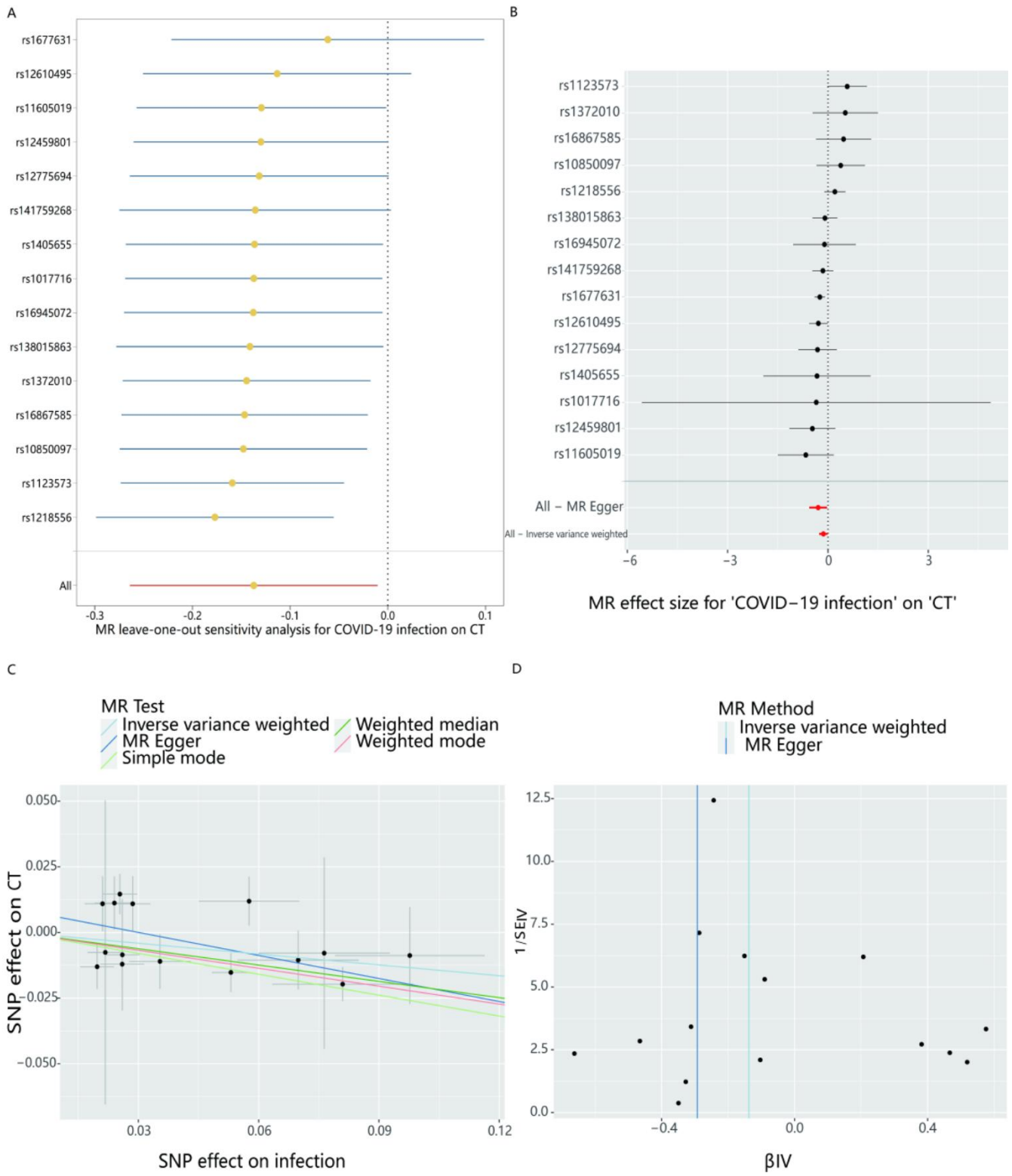


Fig. S13 The causal effect of COVID-19 infection on Cortical Thickness. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

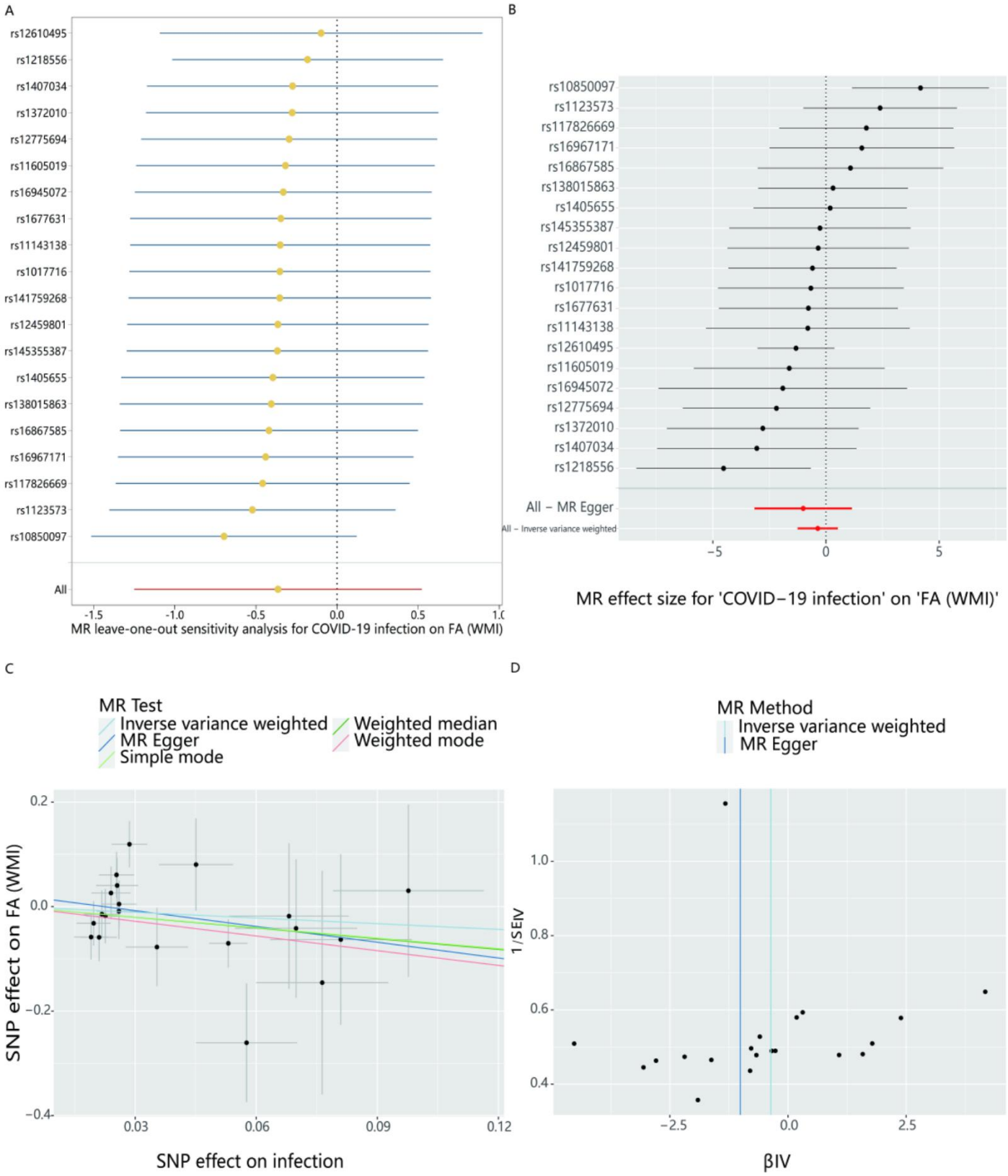


Fig. S14 The causal effect of COVID-19 infection on fractional anisotropy of White matter integrity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

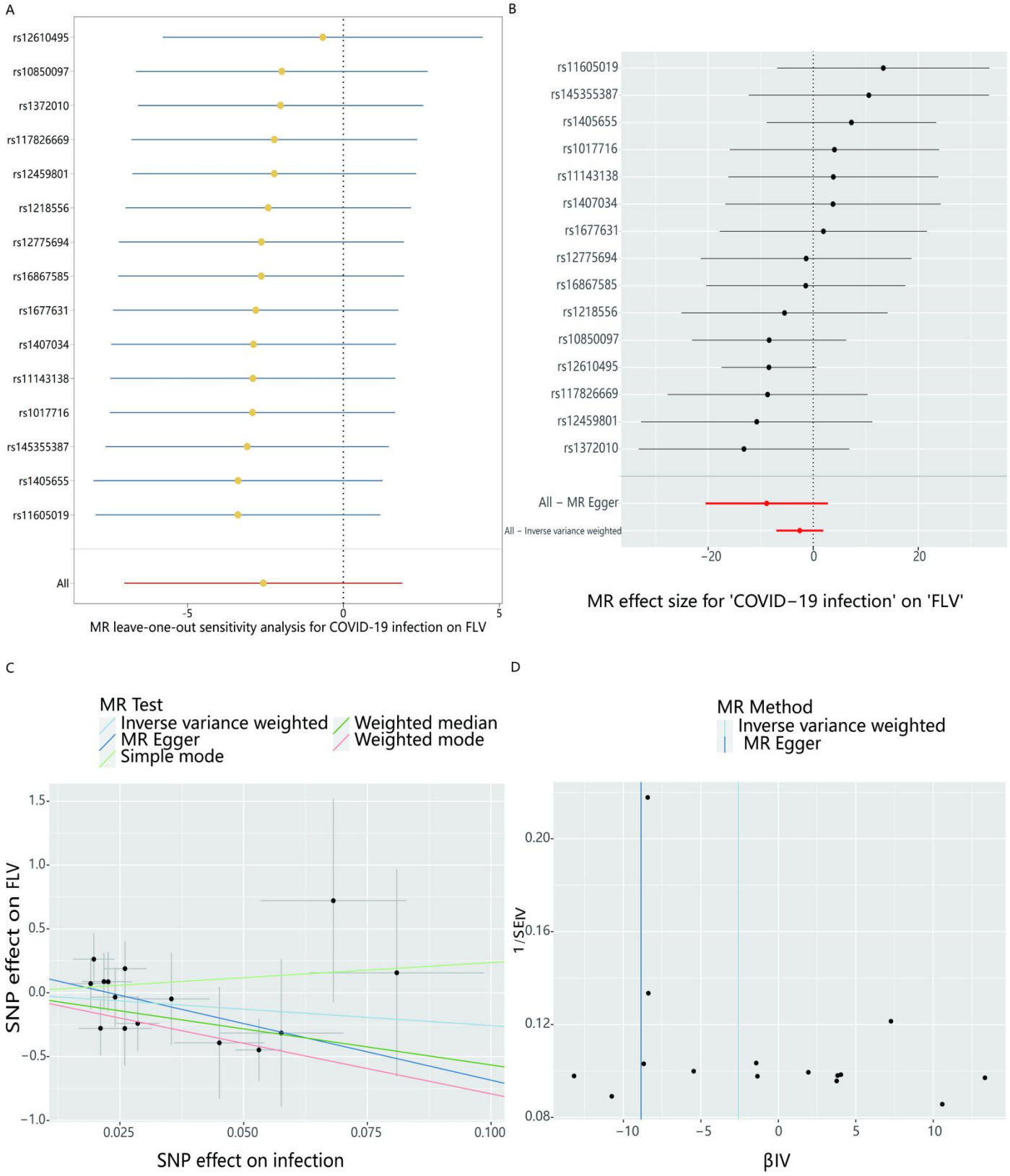


Fig. S15 The causal effect of COVID-19 infection on Frontal lobe volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

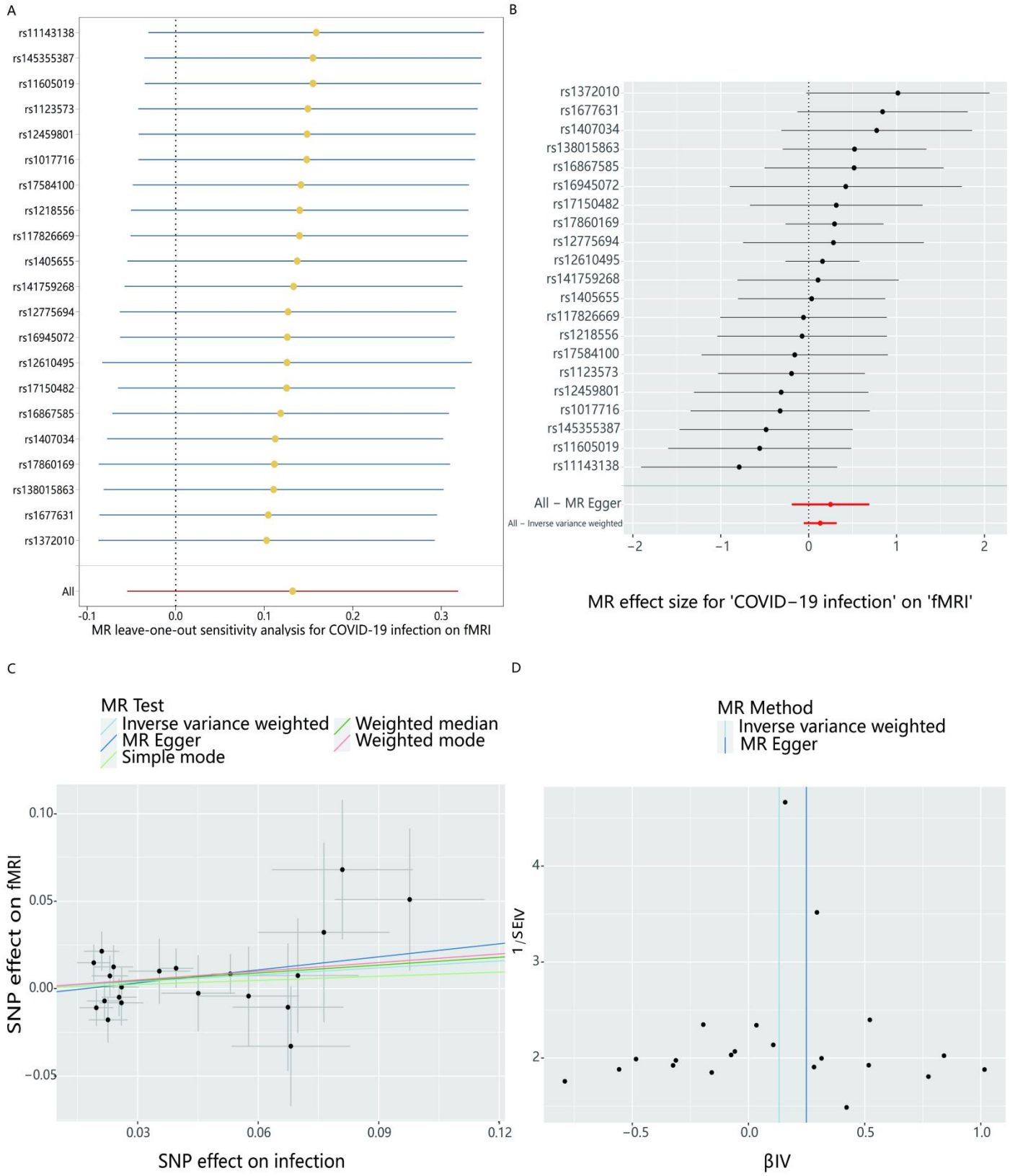


Fig. S16 The causal effect of COVID-19 infection on Functional brain measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

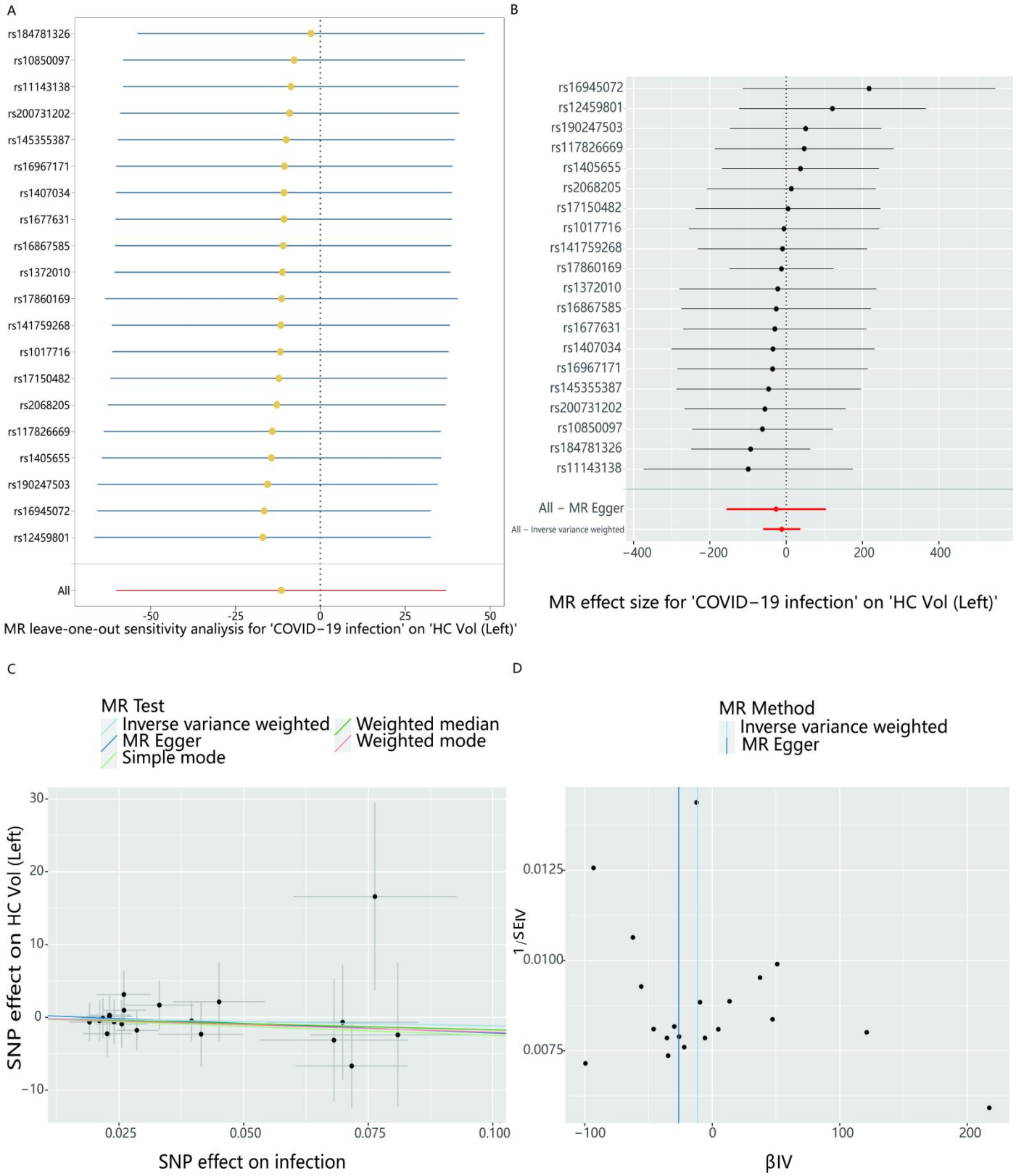


Fig. S17 The causal effect of COVID-19 infection on Left hippocampal volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

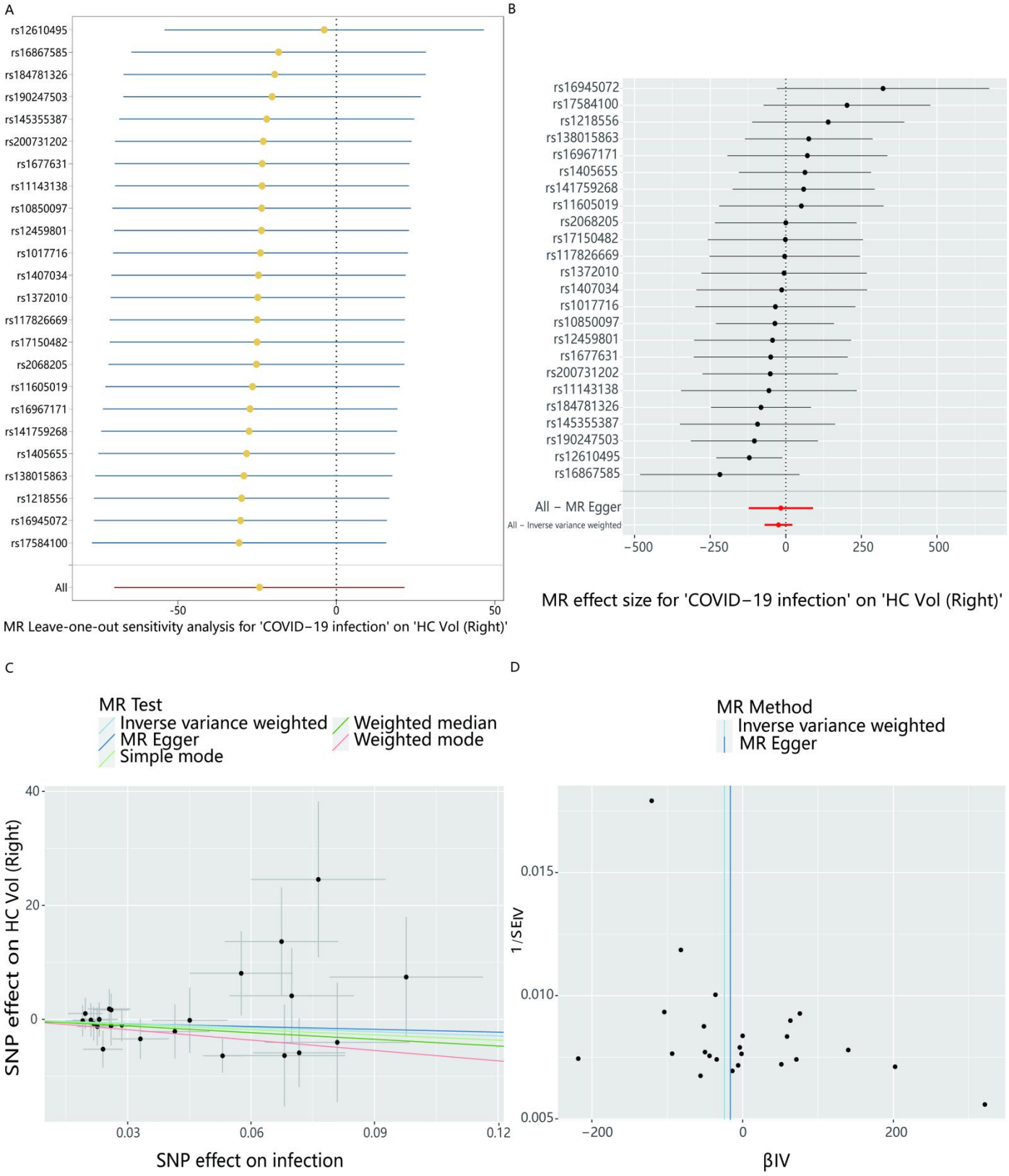


Fig. S18 The causal effect of COVID-19 infection on Right hippocampal volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

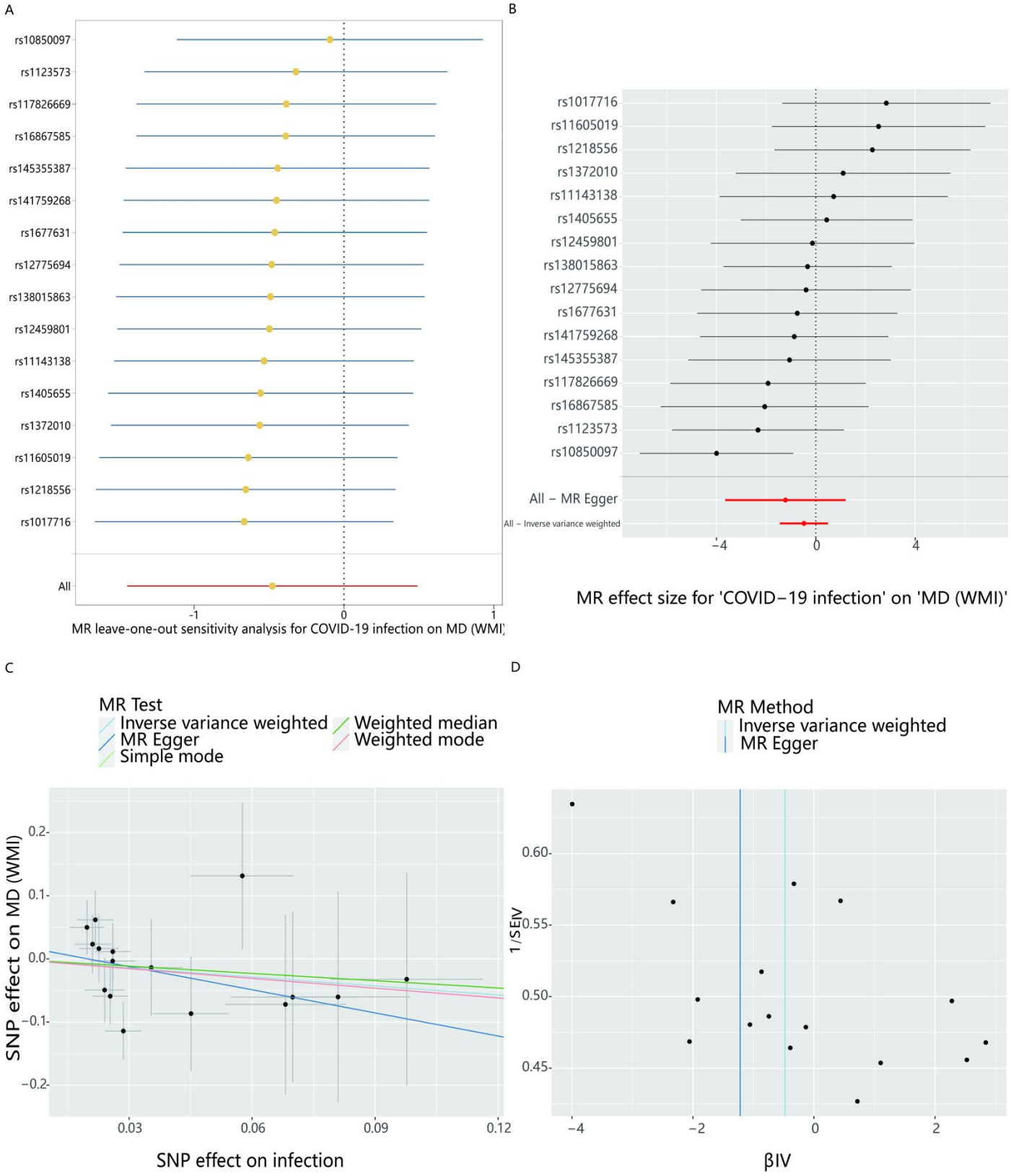


Fig. S19 The causal effect of COVID-19 infection on mean diffusivity of White matter integrity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

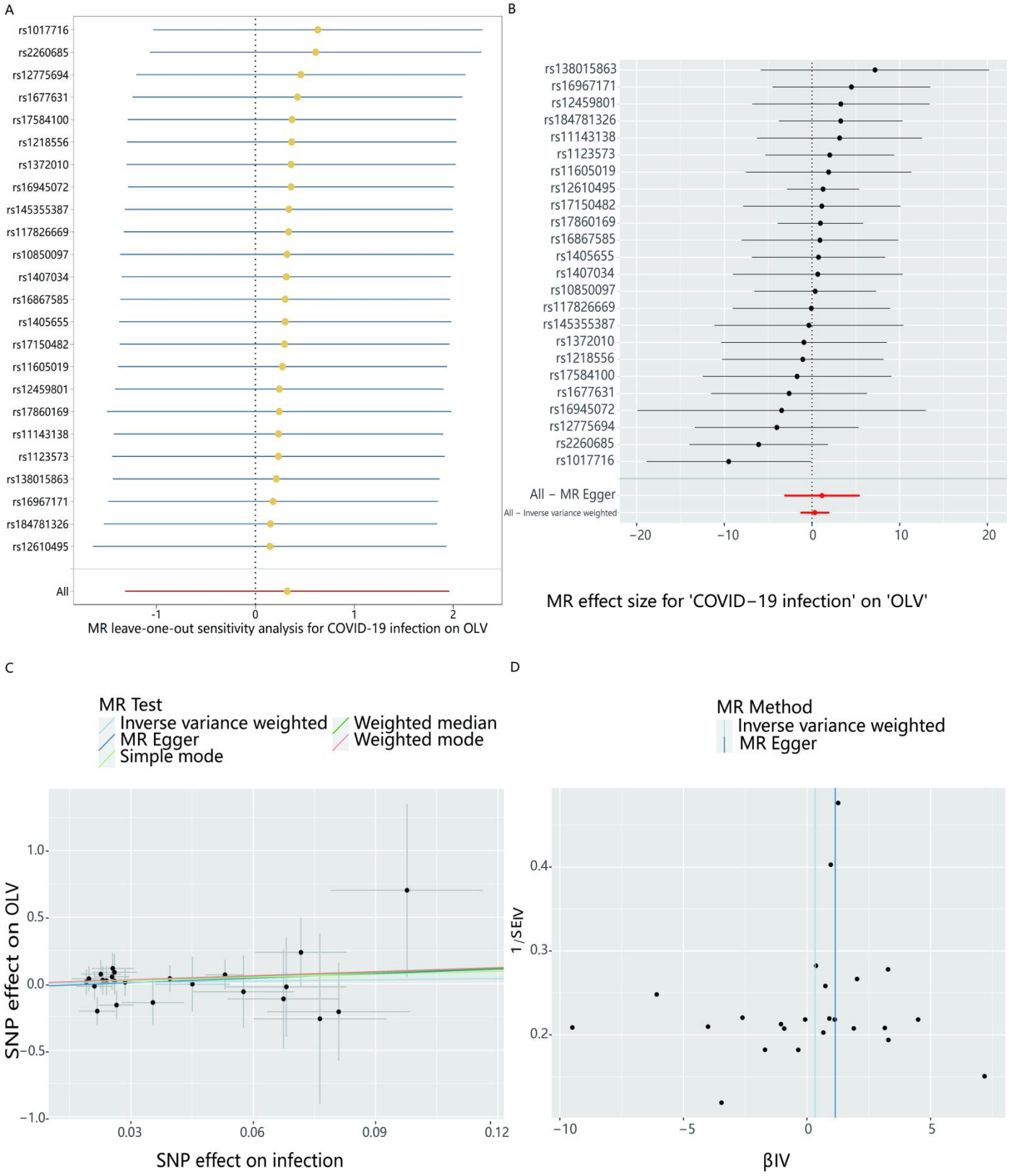


Fig. S20 The causal effect of COVID-19 infection on Occipital lobe volume measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

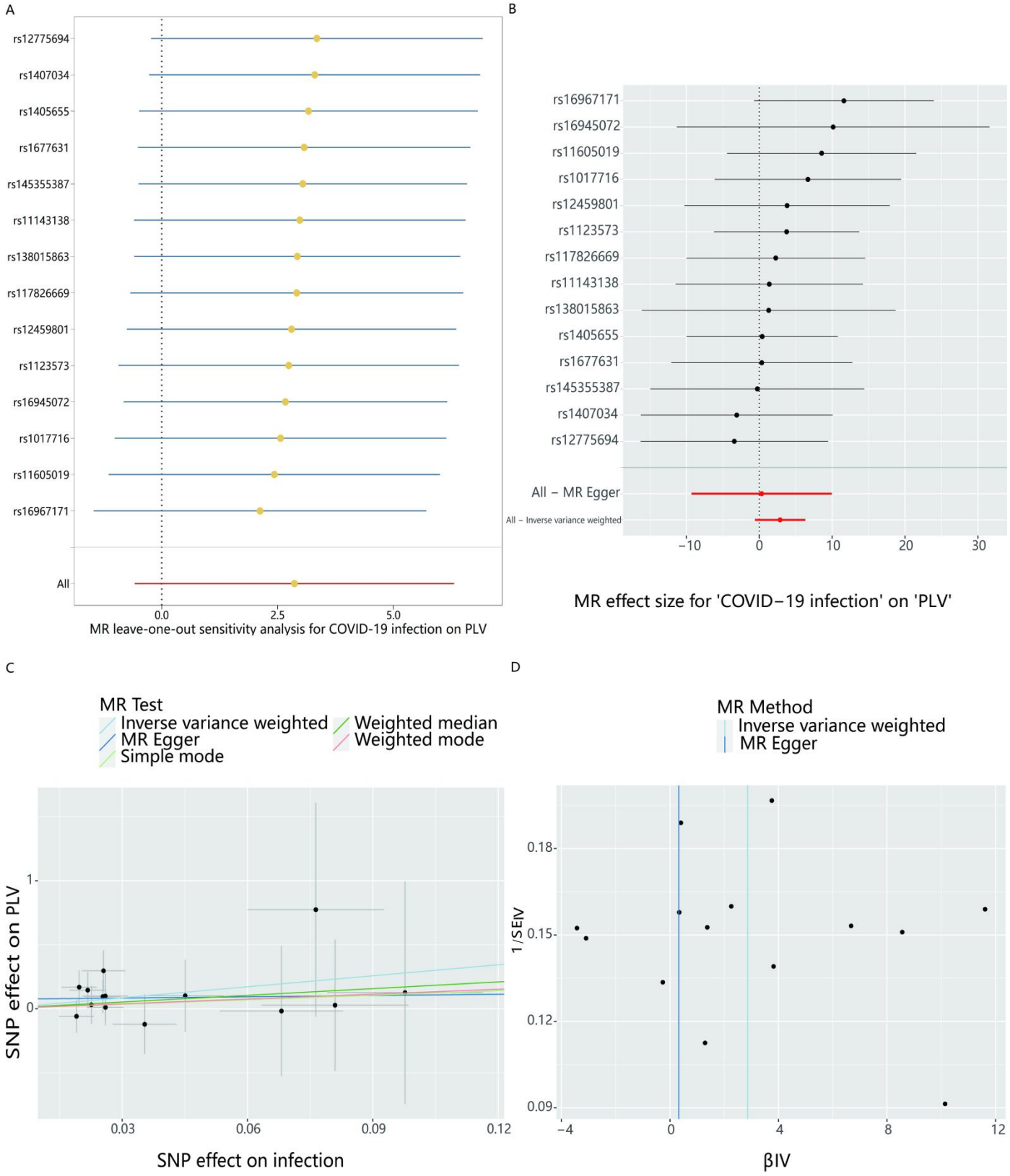


Fig. S21 The causal effect of COVID-19 infection on Parietal lobe volume measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

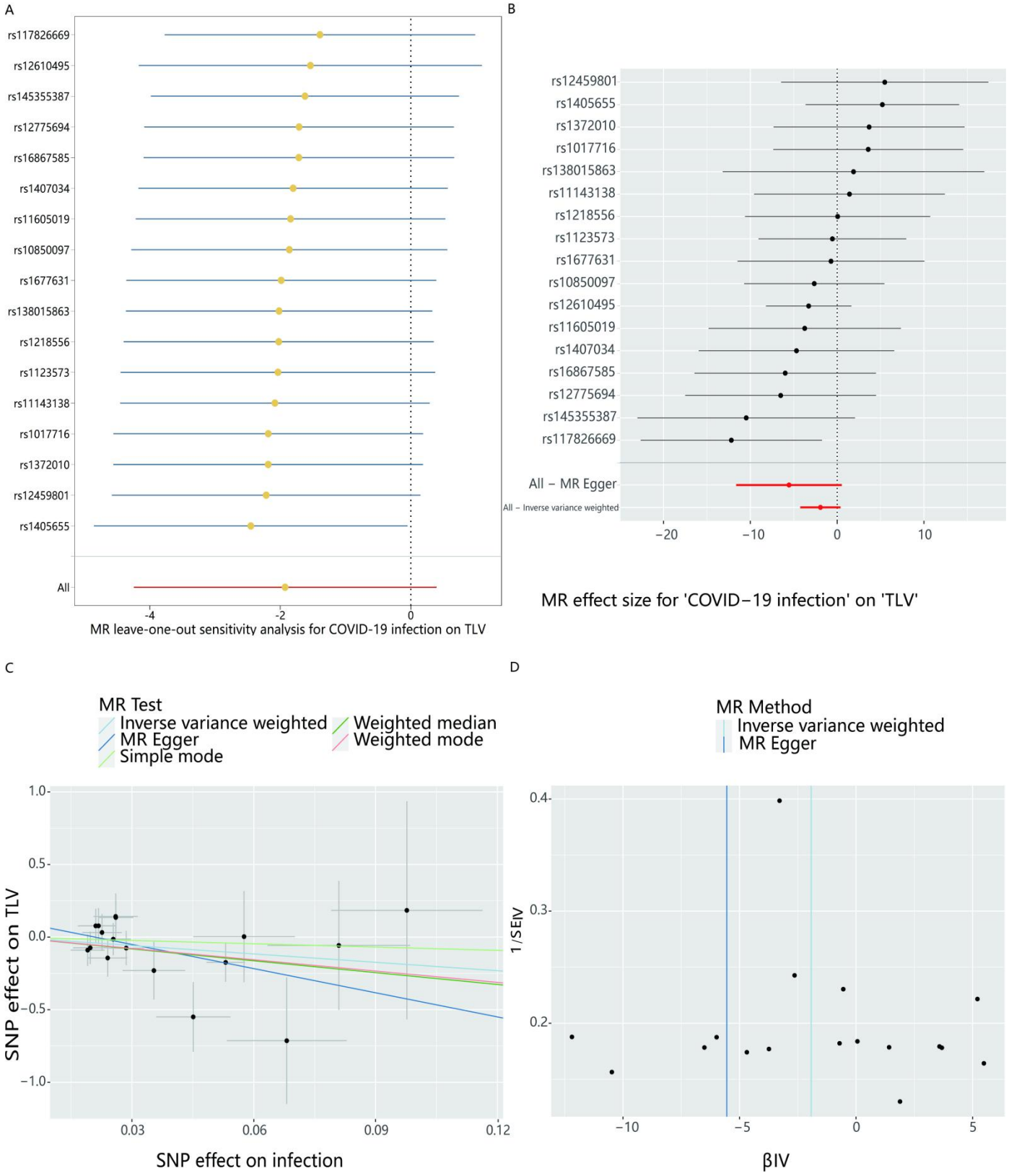


Fig. S22 The causal effect of COVID-19 infection on Temporal lobe volume measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

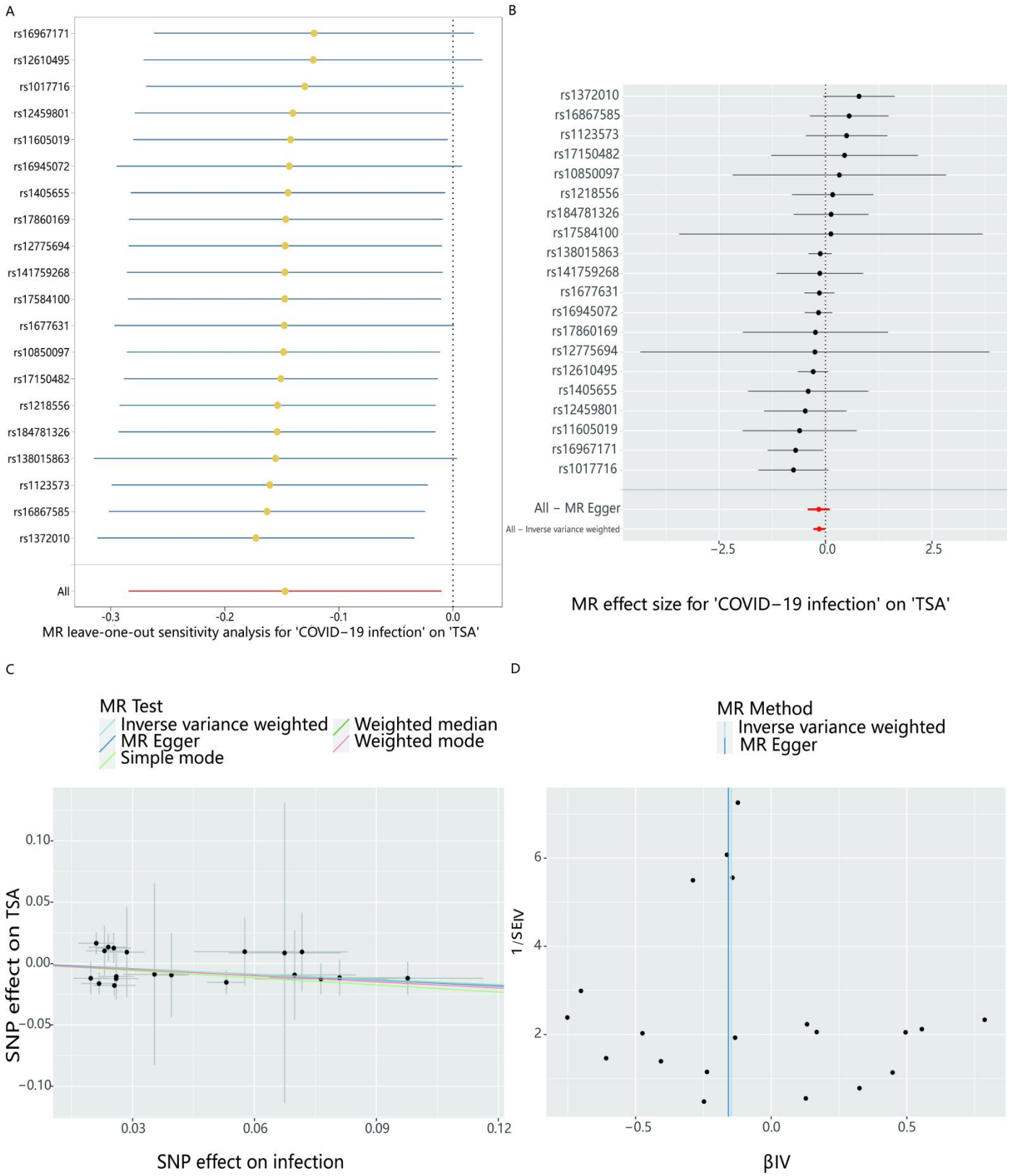


Fig. S23 The causal effect of COVID-19 infection on Total surface area measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

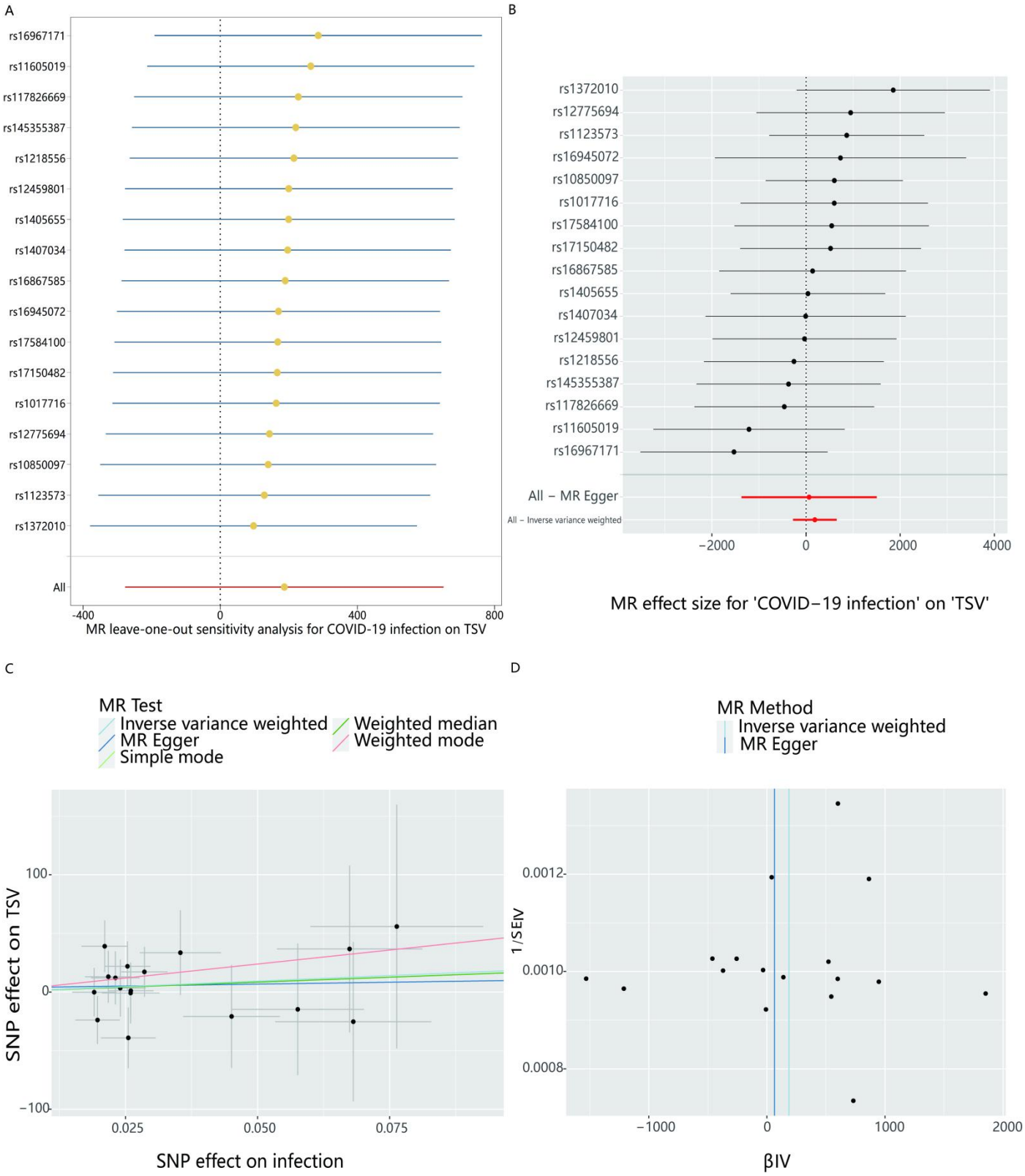


Fig. S24 The causal effect of COVID-19 infection on Total subcortical volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

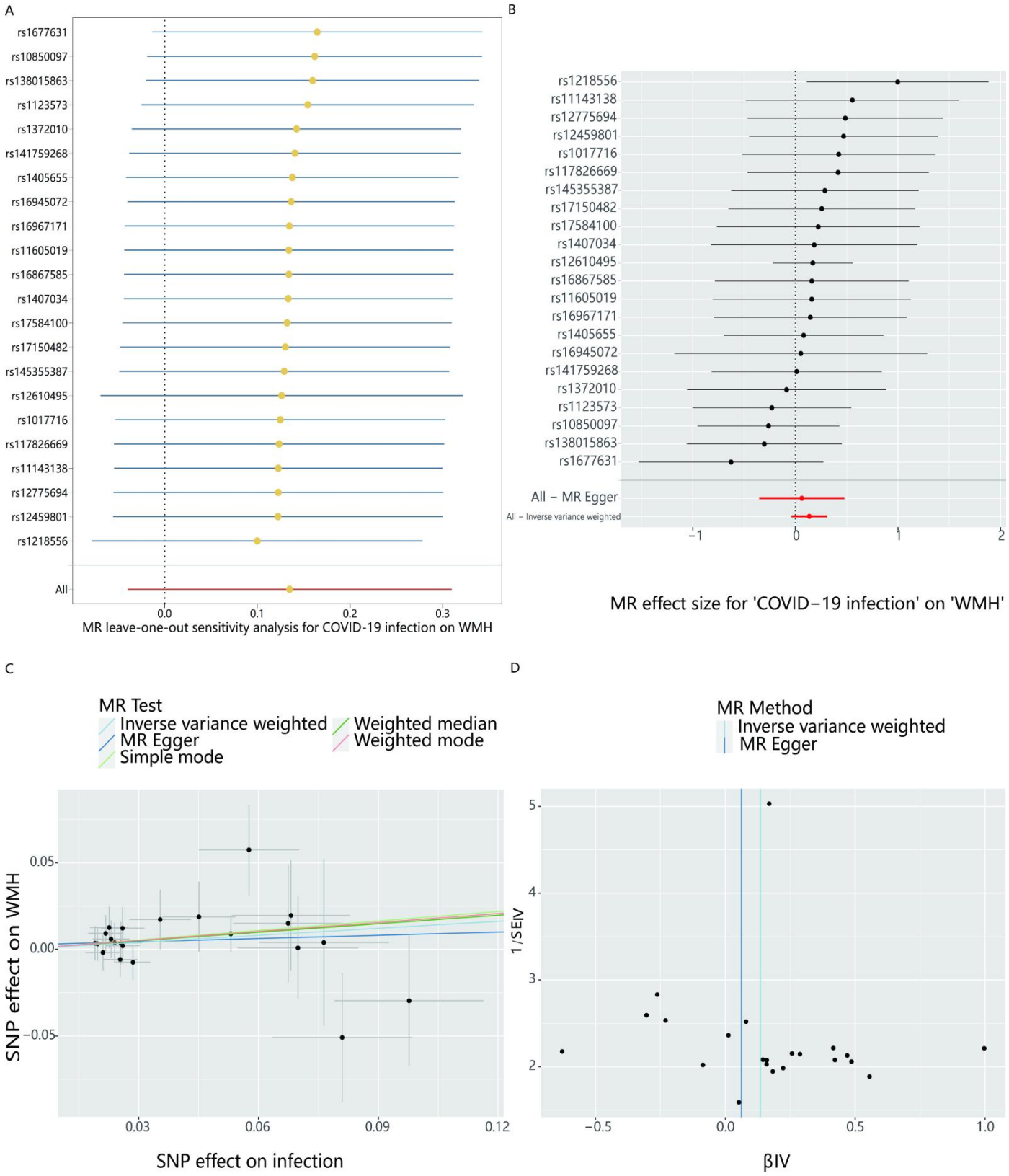


Fig. S25 The causal effect of COVID-19 infection on White matter hyperintensity measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

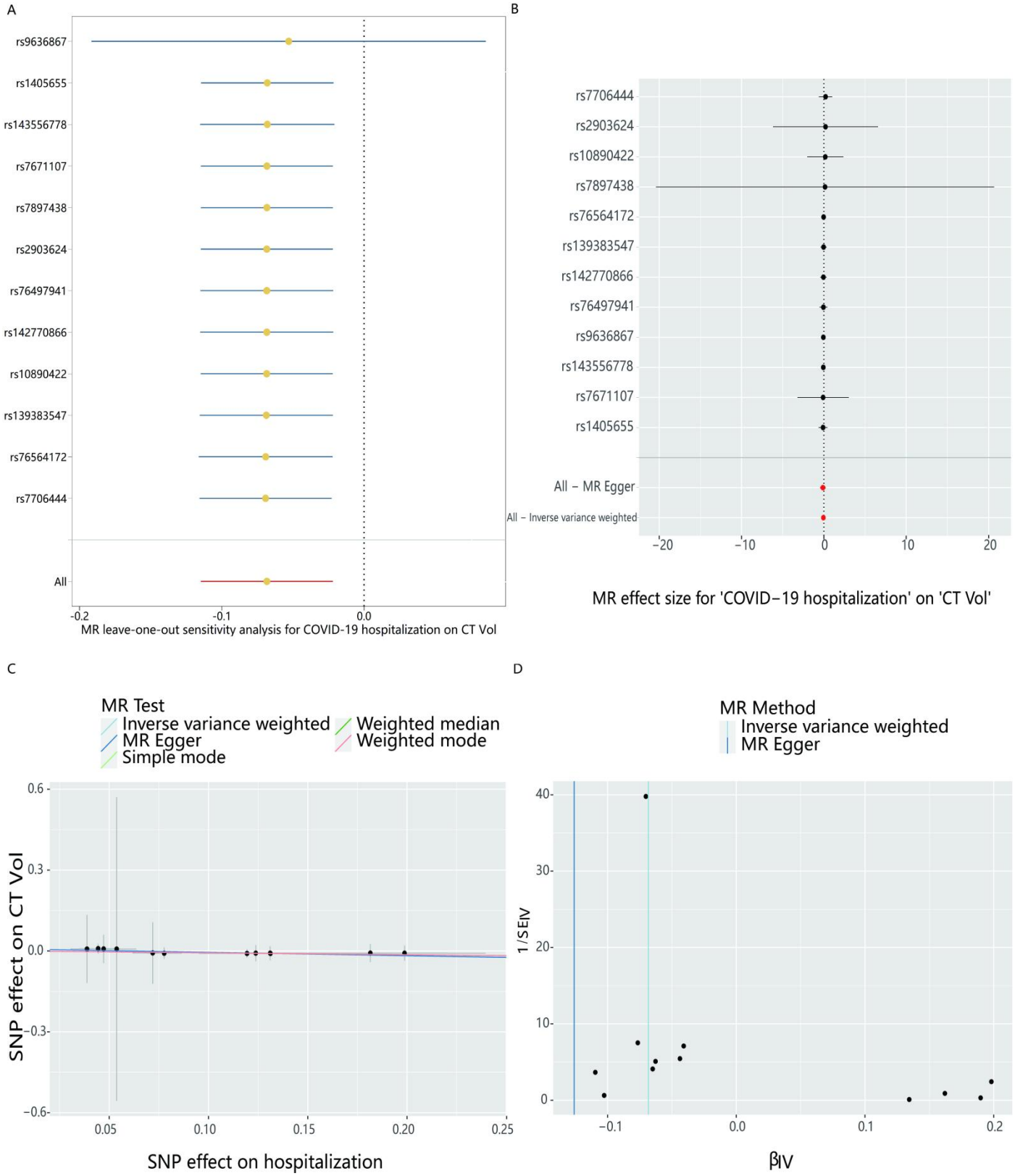


Fig. S26 The causal effect of COVID-19 hospitalization on Cortical Thickness Volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

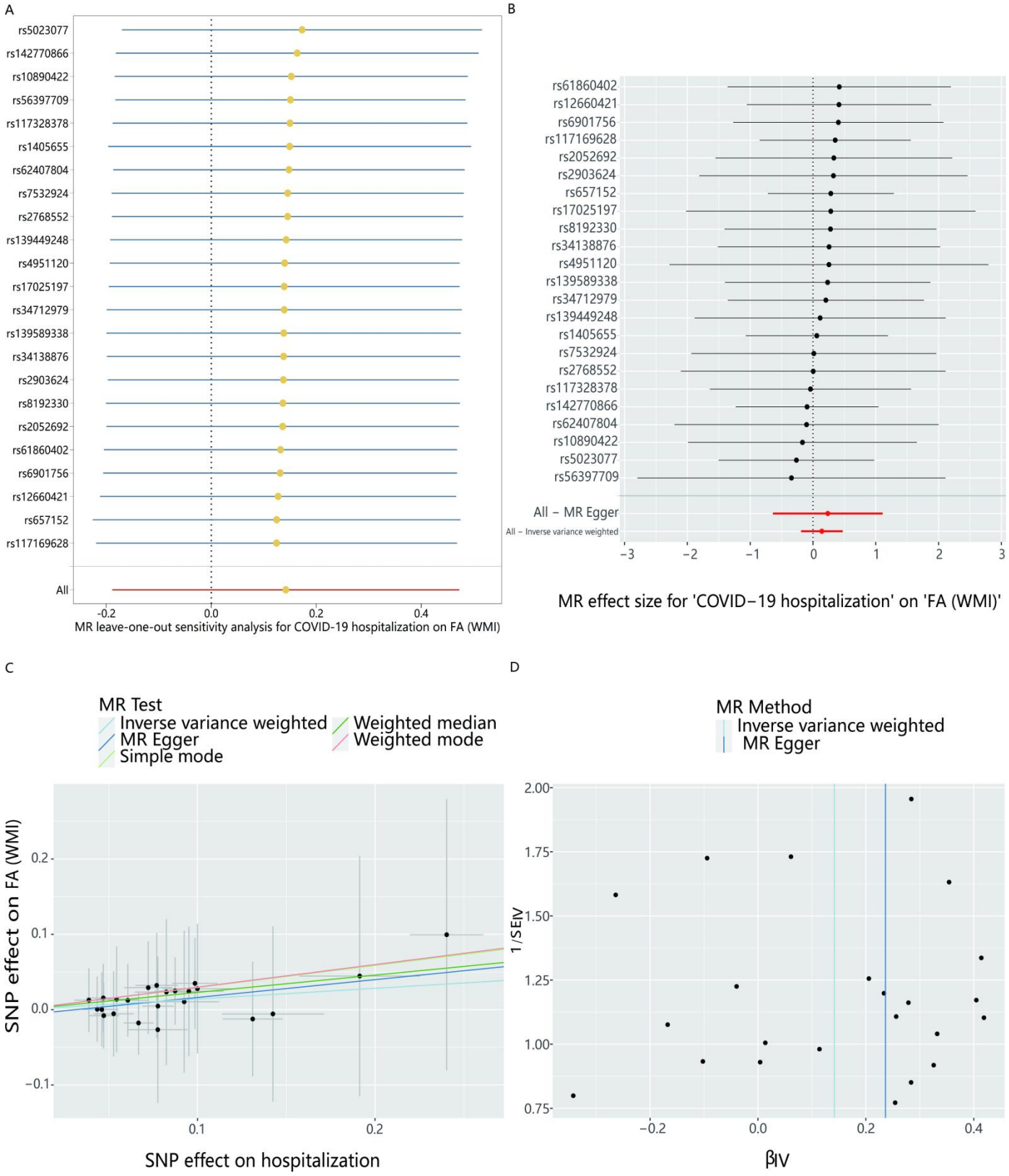


Fig. S27 The causal effect of COVID-19 hospitalization on fractional anisotropy of White matter integrity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

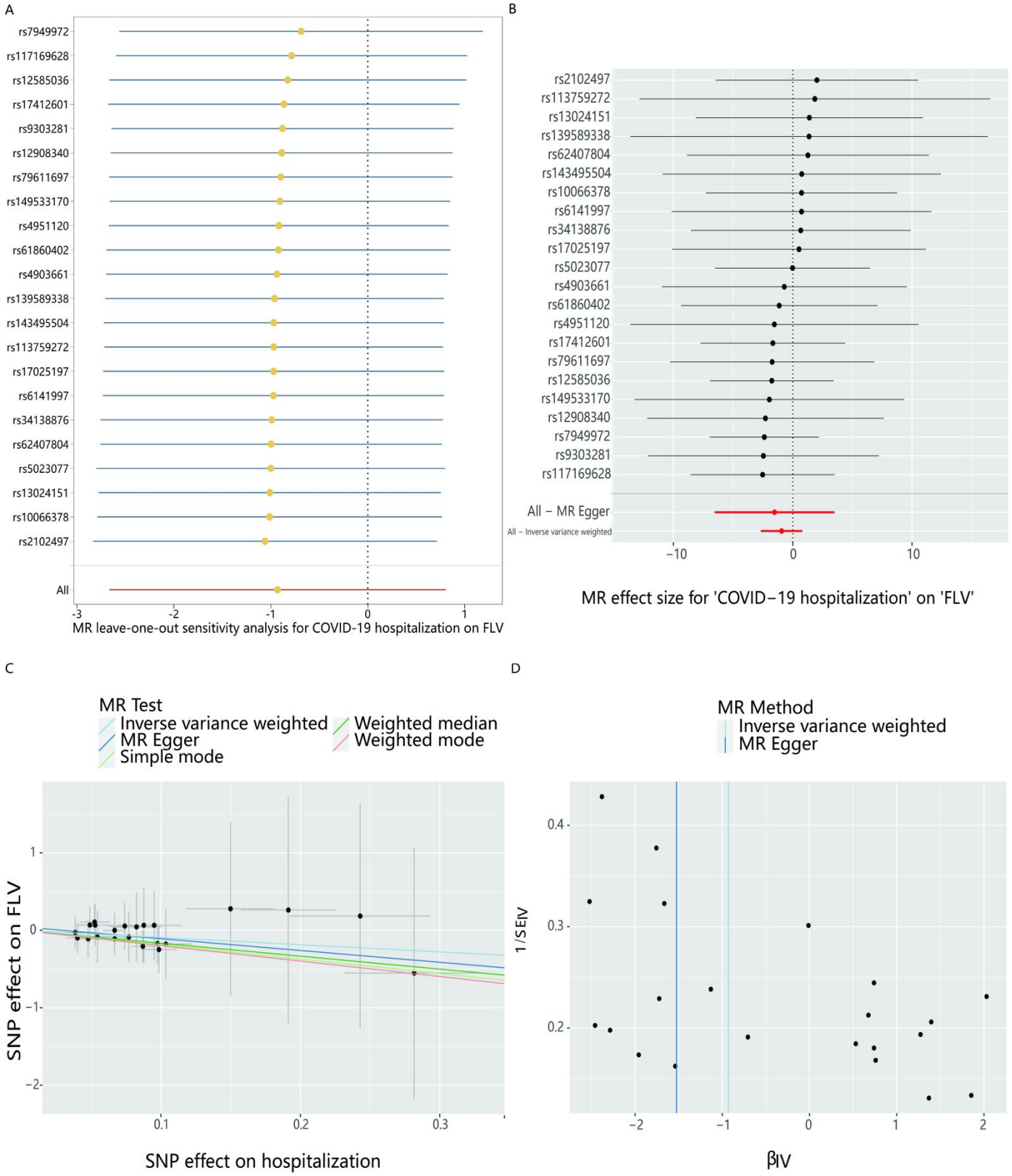


Fig. S28 The causal effect of COVID-19 hospitalization on Frontal lobe volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

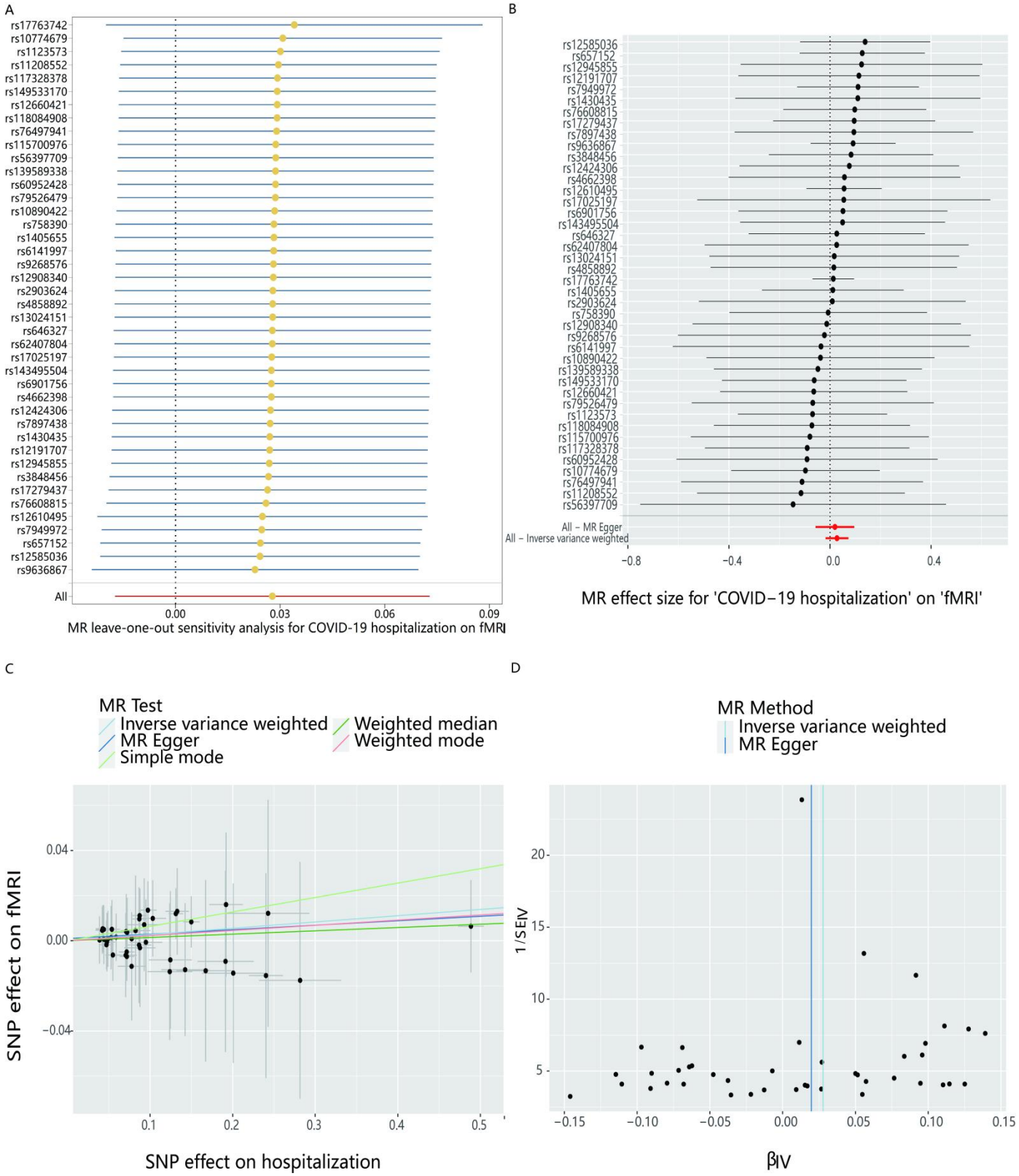


Fig. S29 The causal effect of COVID-19 hospitalization on Functional brain measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

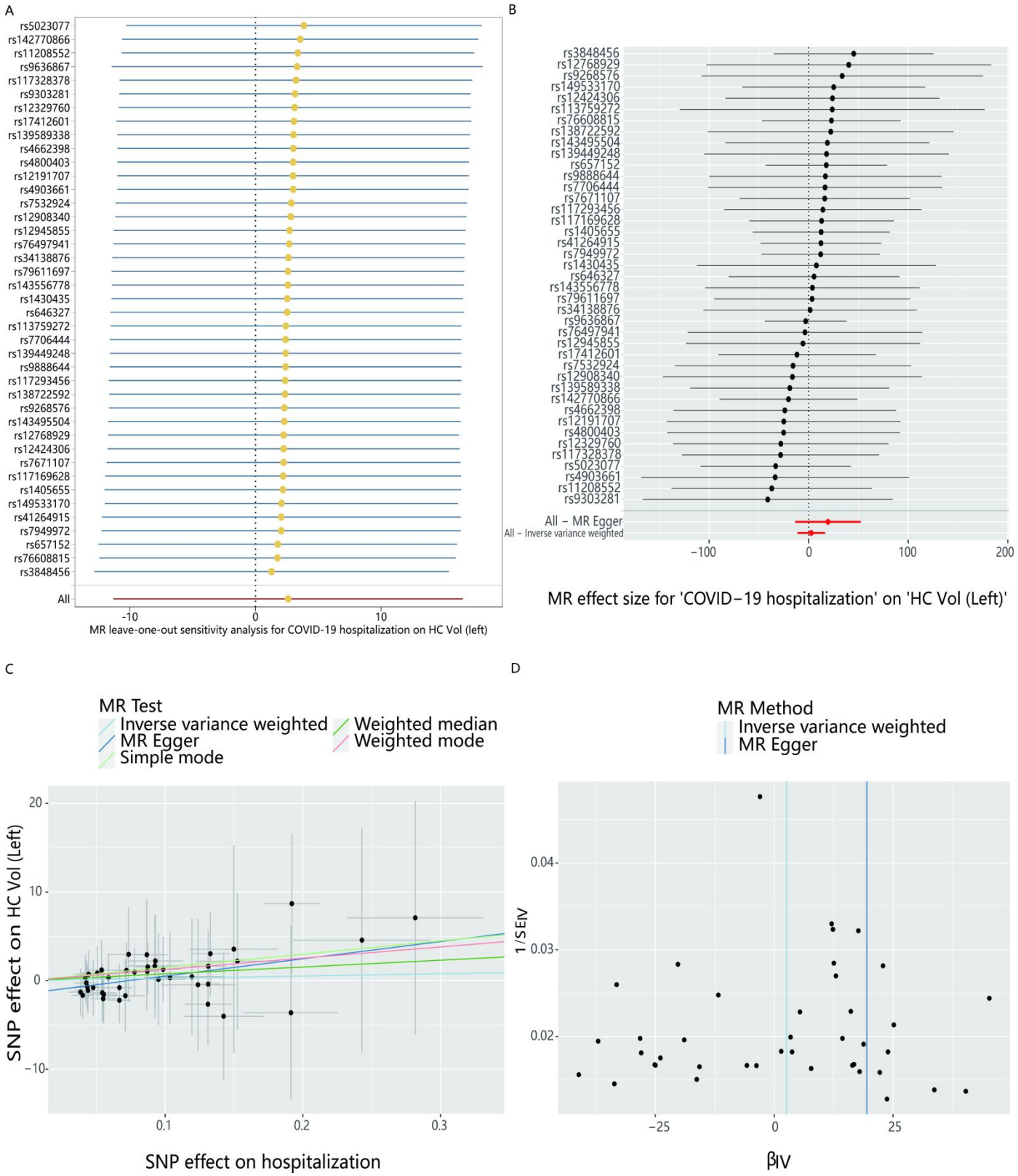


Fig. S30 The causal effect of COVID-19 hospitalization on Left hippocampal volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

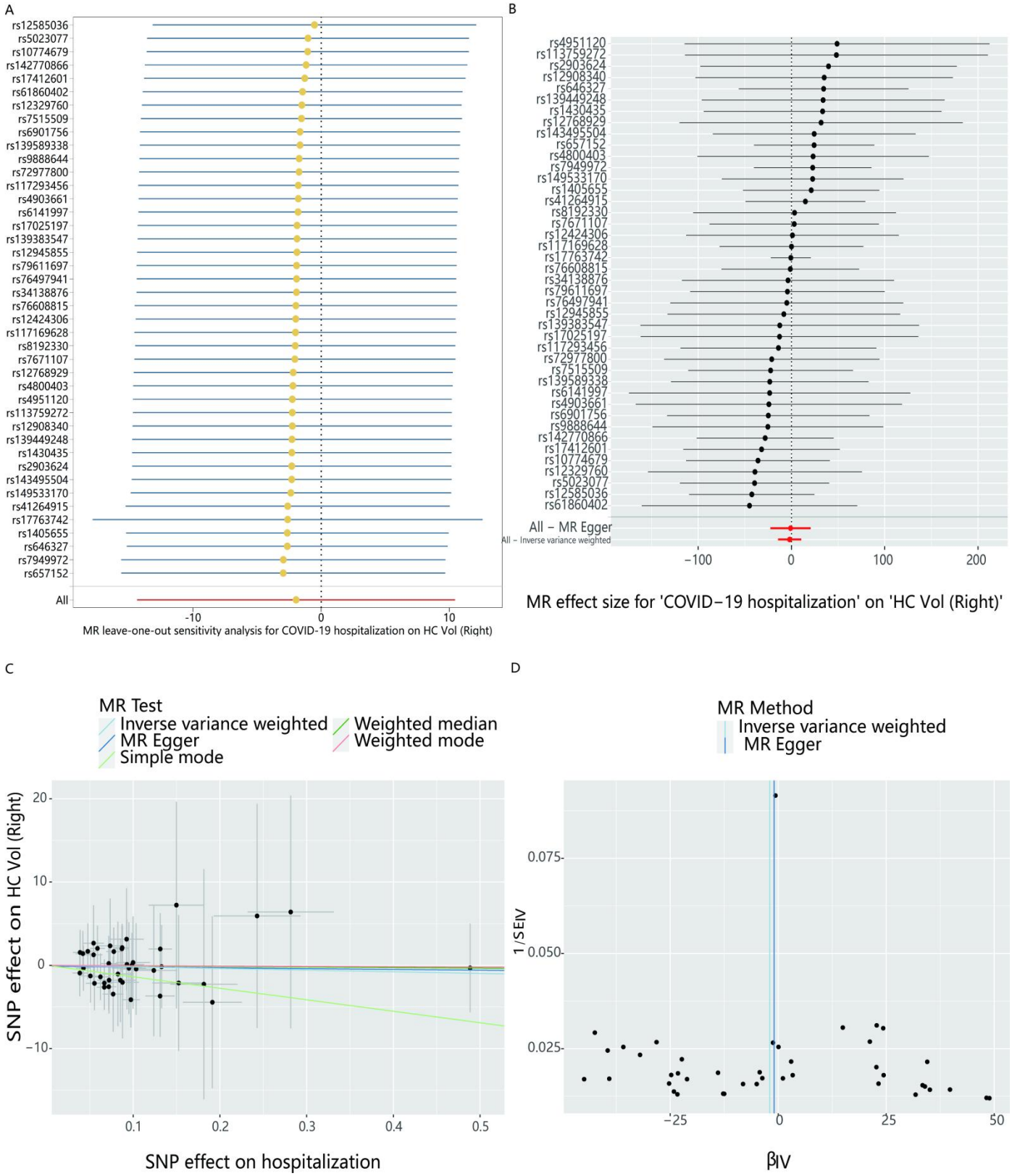


Fig. S31 The causal effect of COVID-19 hospitalization on Right hippocampal volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

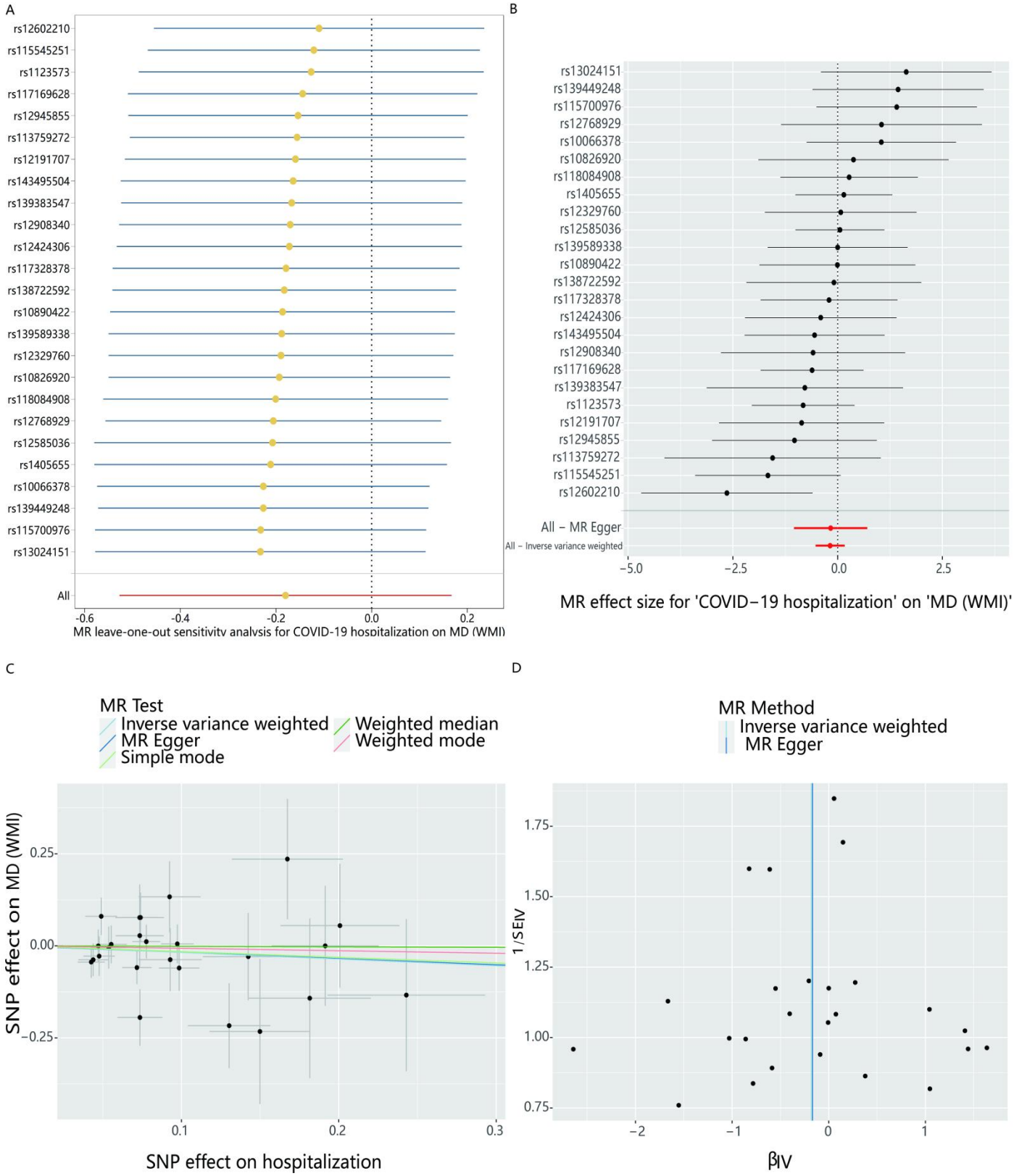


Fig. S32 The causal effect of COVID-19 hospitalization on mean diffusivity of White matter integrity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

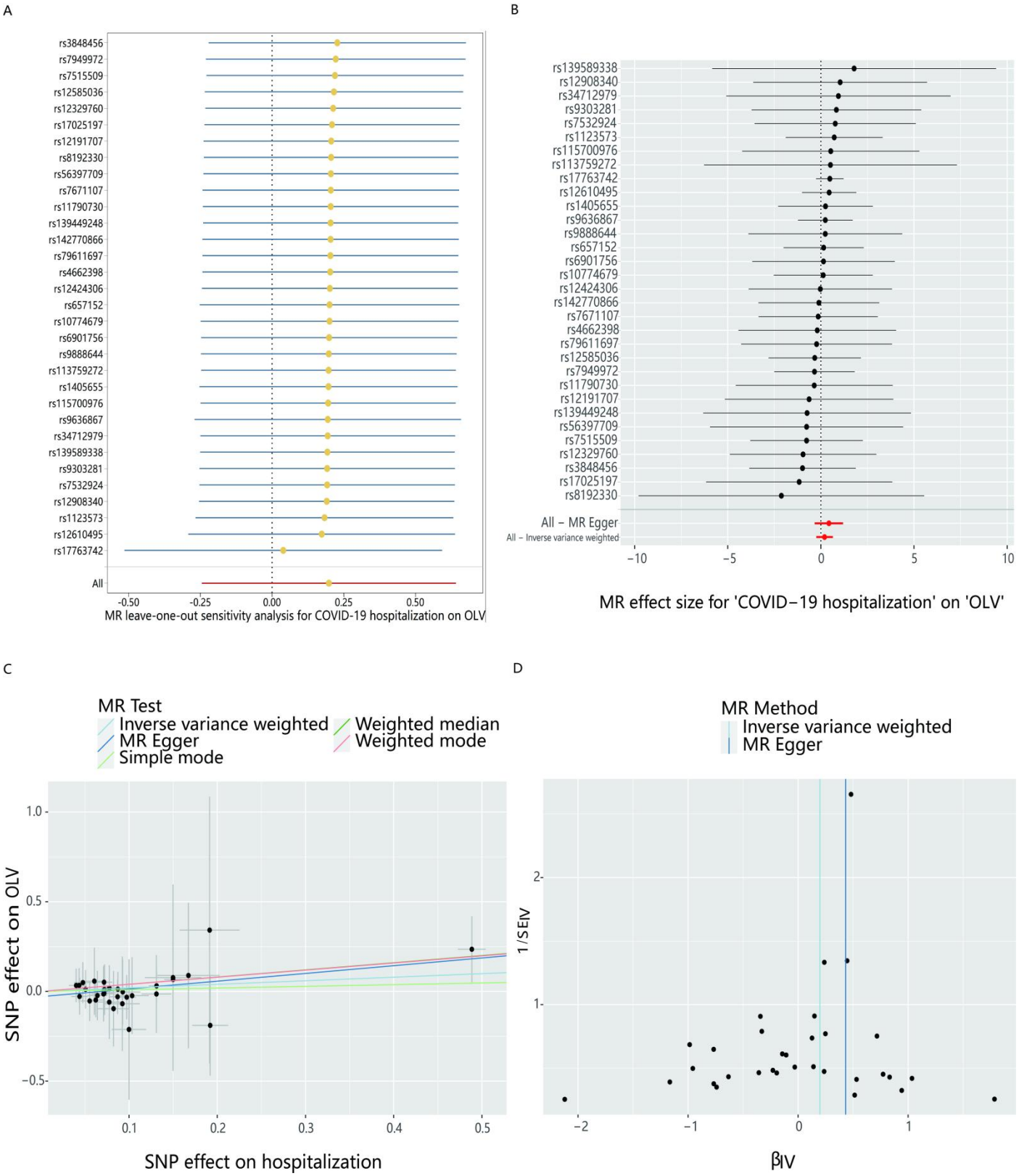


Fig. S33 The causal effect of COVID-19 hospitalization on Occipital lobe volume measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

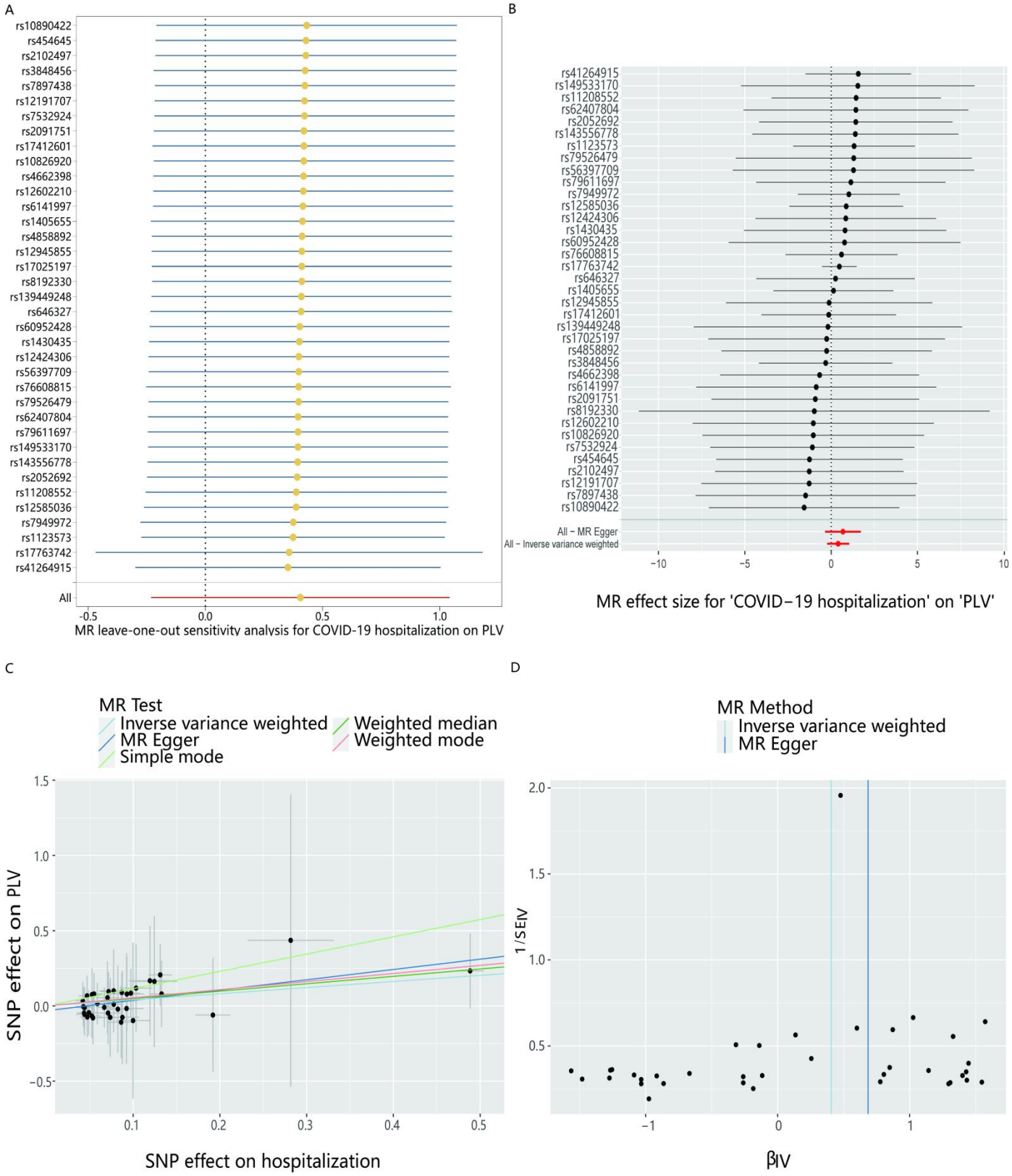


Fig. S34 The causal effect of COVID-19 hospitalization on Parietal lobe volume measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

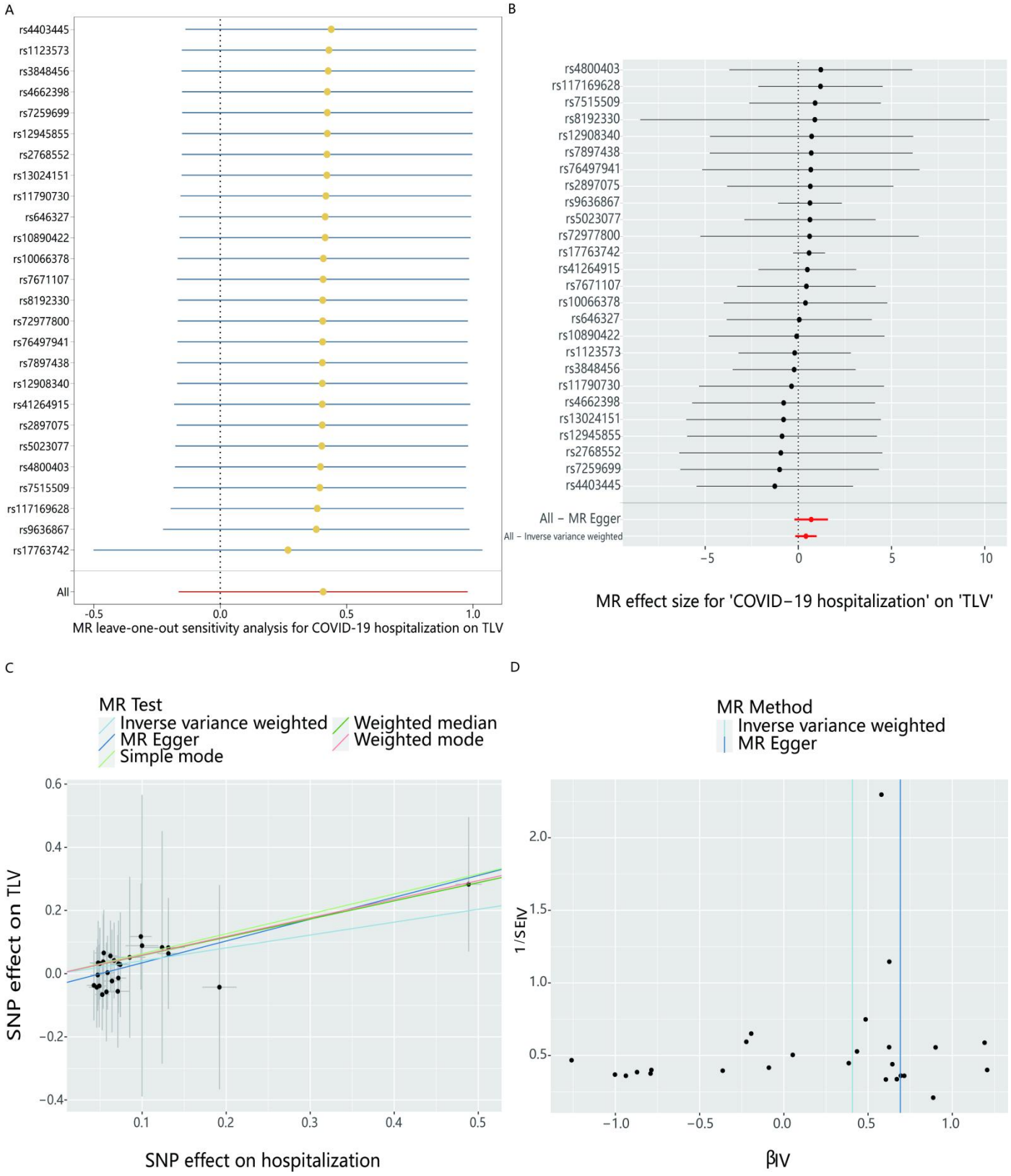


Fig. S35 The causal effect of COVID-19 hospitalization on Temporal lobe volume measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

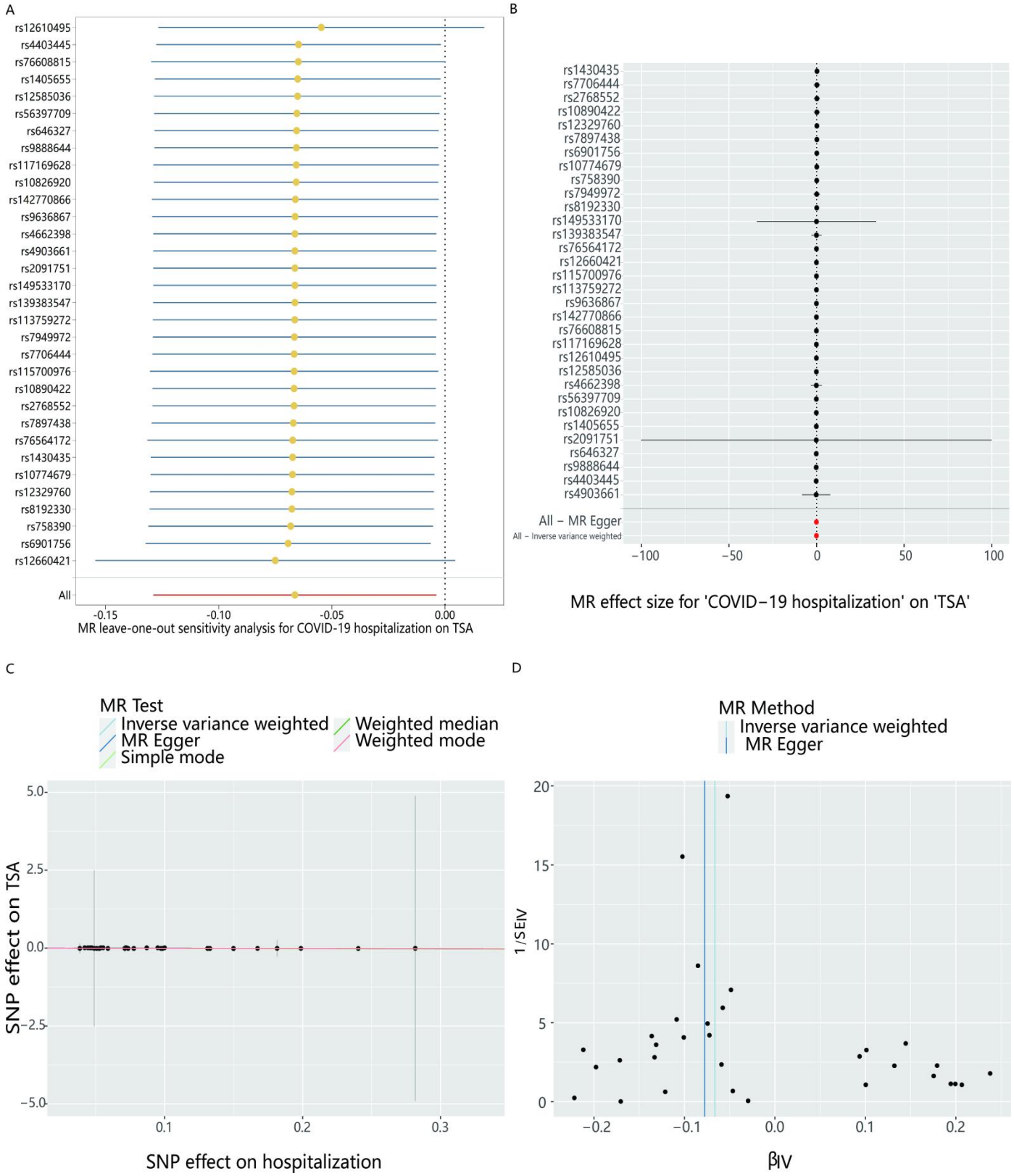


Fig. S36 The causal effect of COVID-19 hospitalization on Total surface area measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

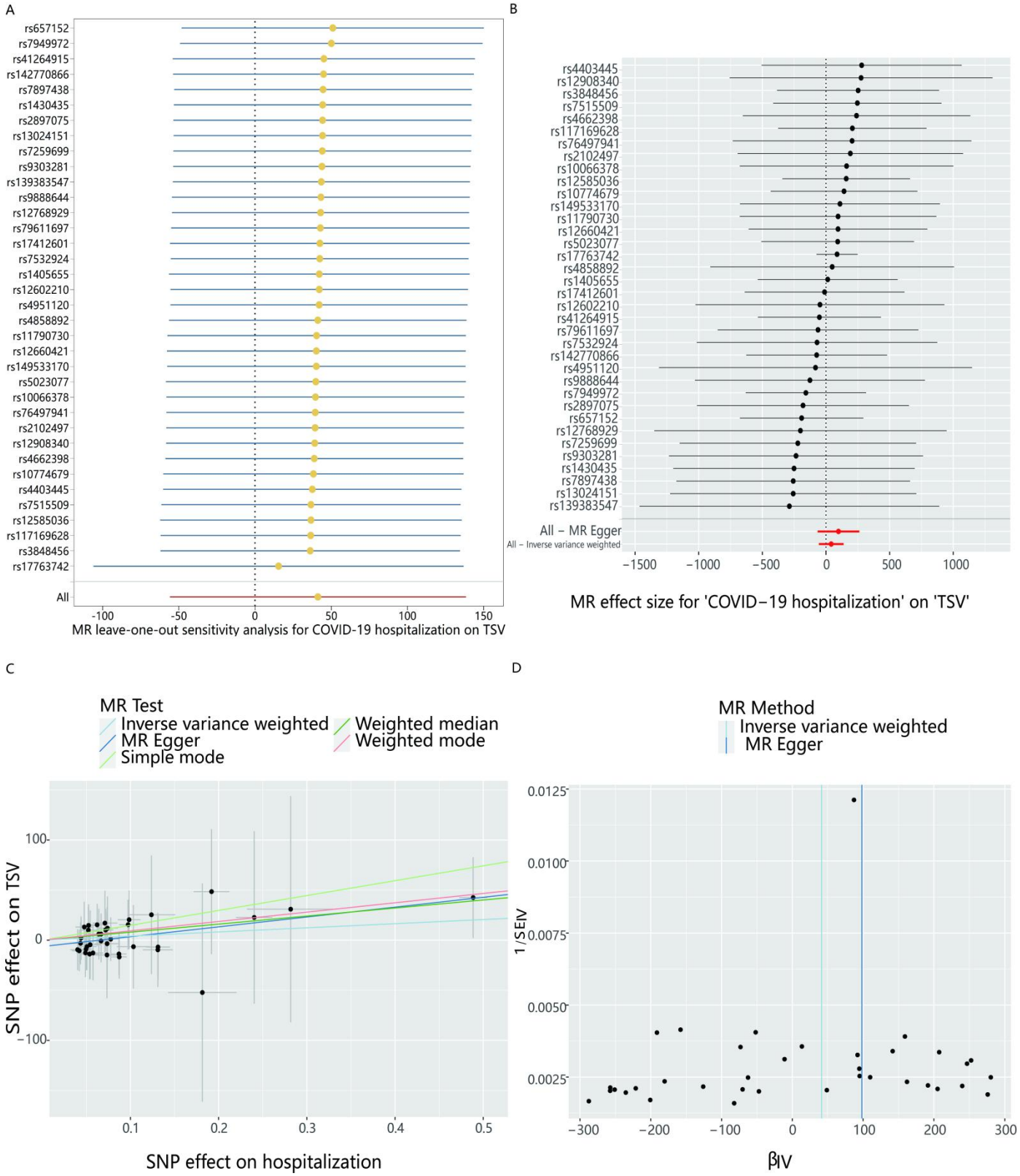


Fig. S37 The causal effect of COVID-19 hospitalization on Total subcortical volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

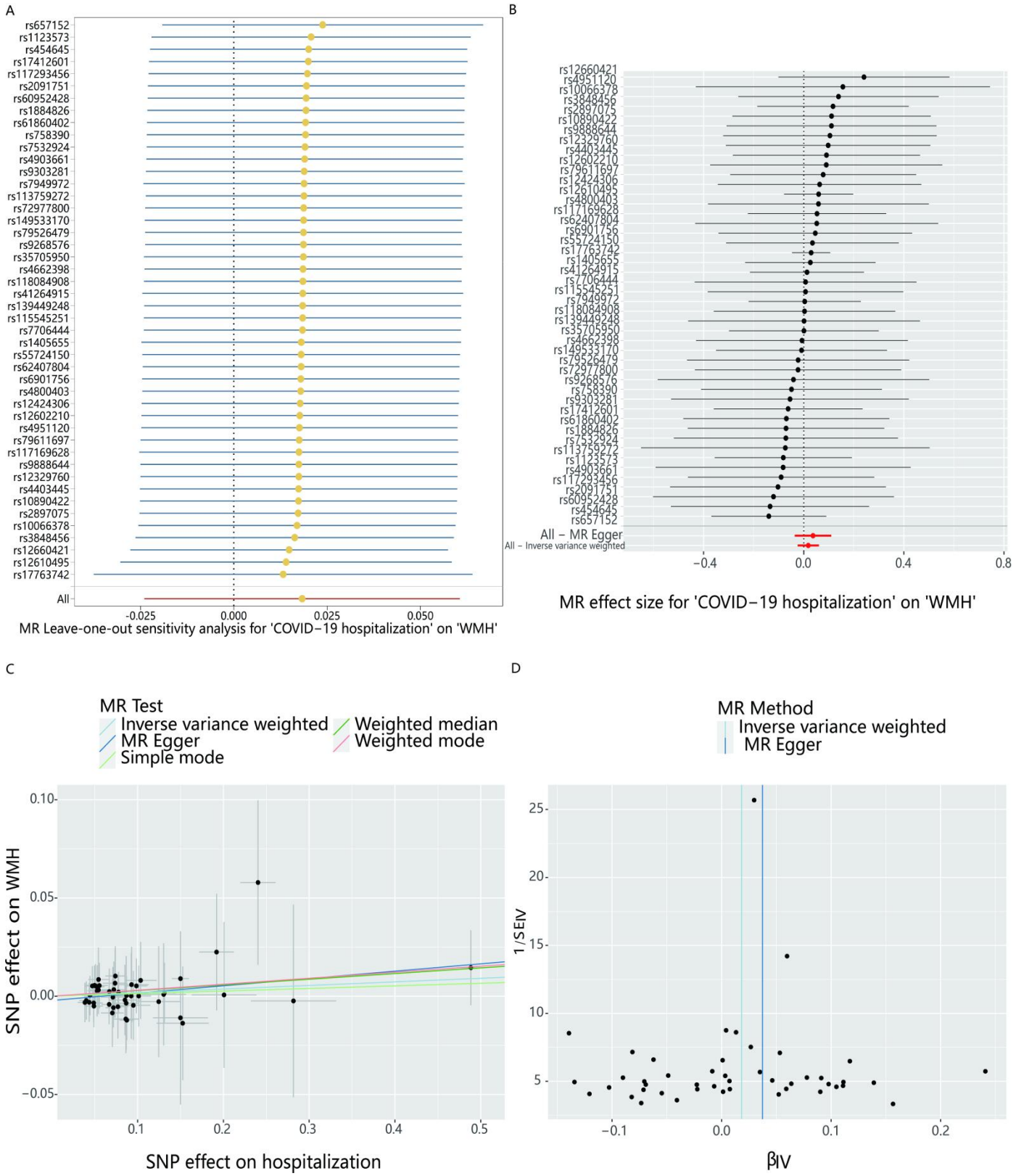


Fig. S38 The causal effect of COVID-19 hospitalization on White matter hyperintensity measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

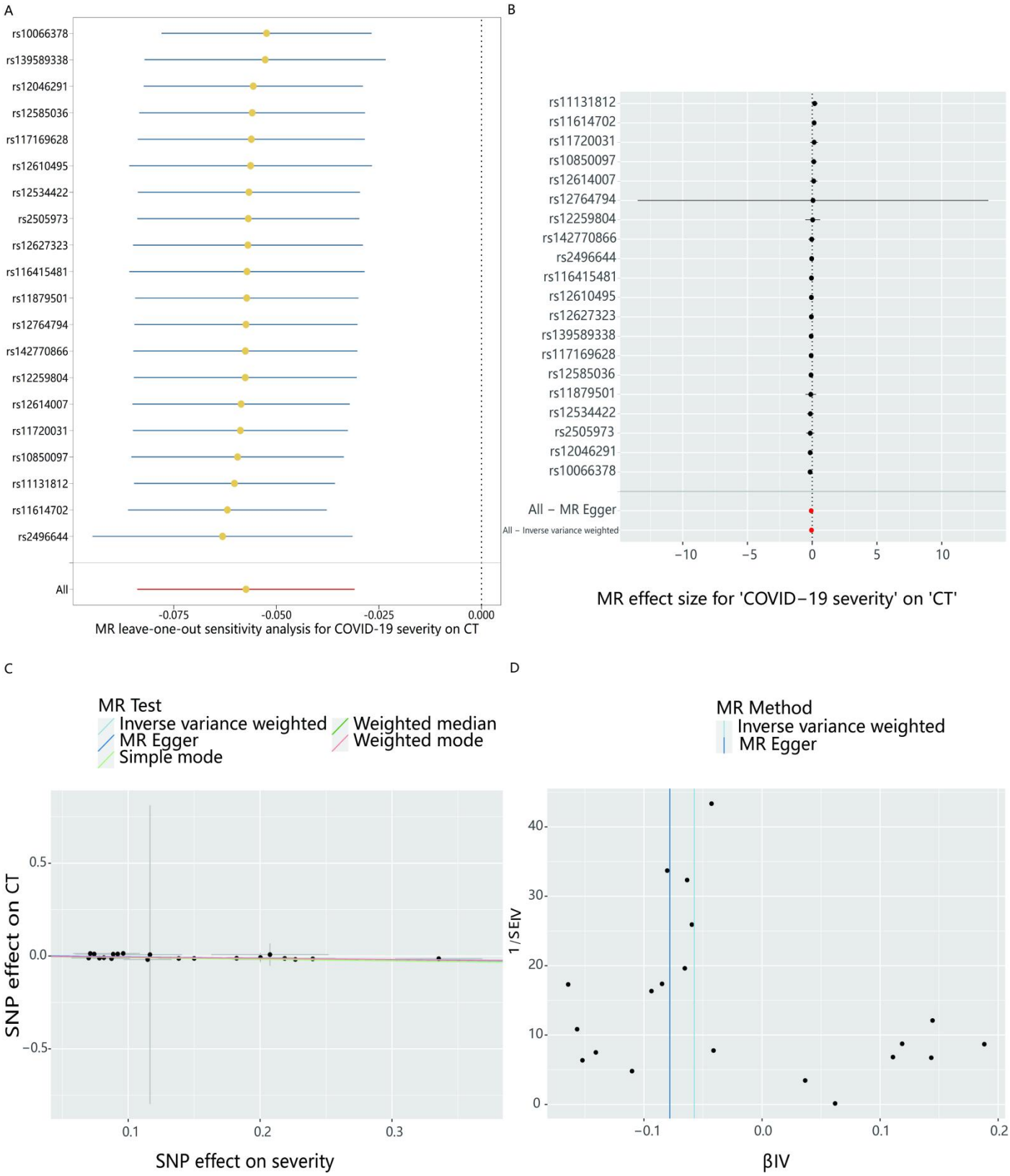


Fig. S39 The causal effect of COVID-19 severity on Cortical Thickness Volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

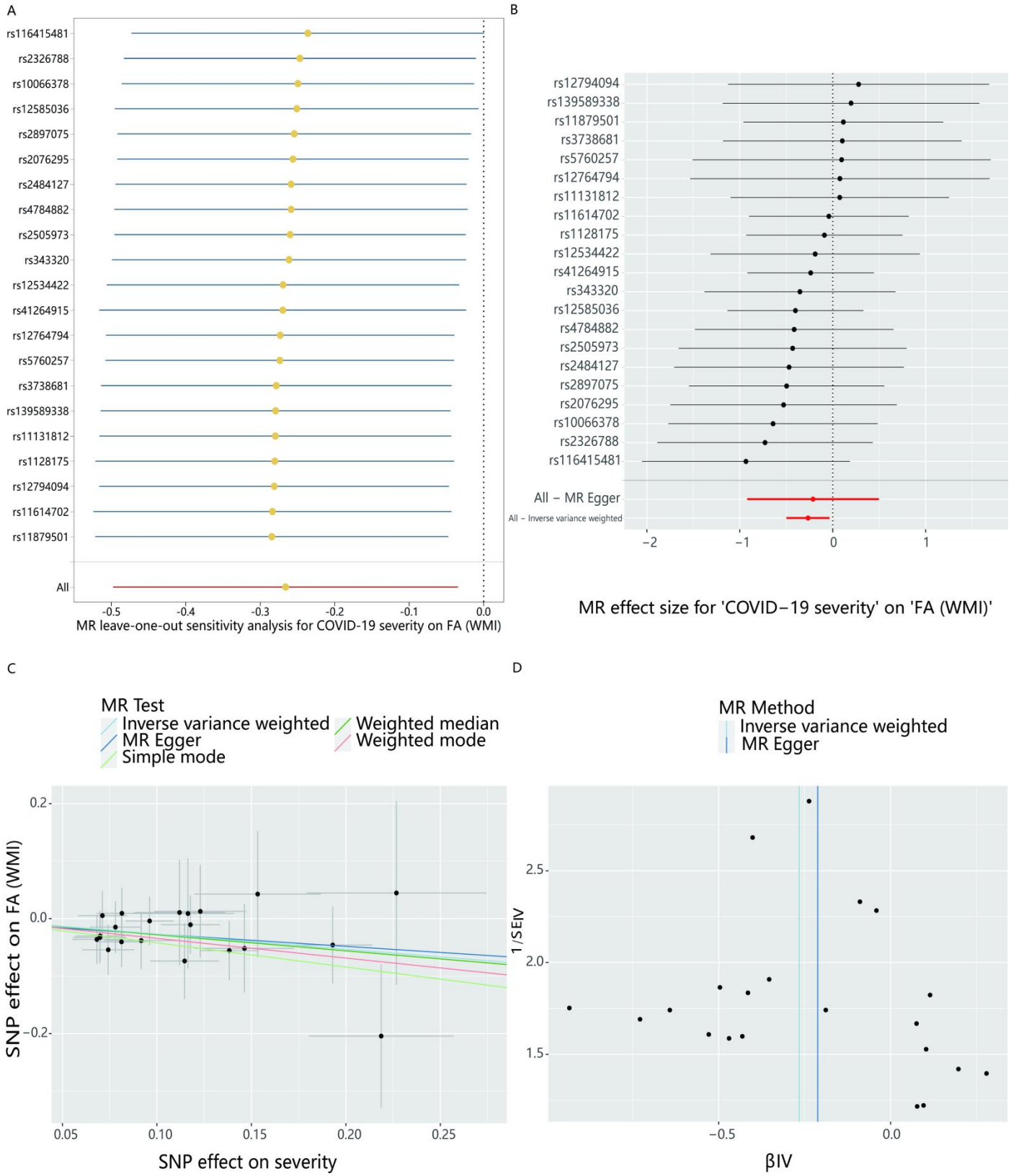


Fig. S40 The causal effect of COVID-19 severity on fractional anisotropy of White matter integrity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

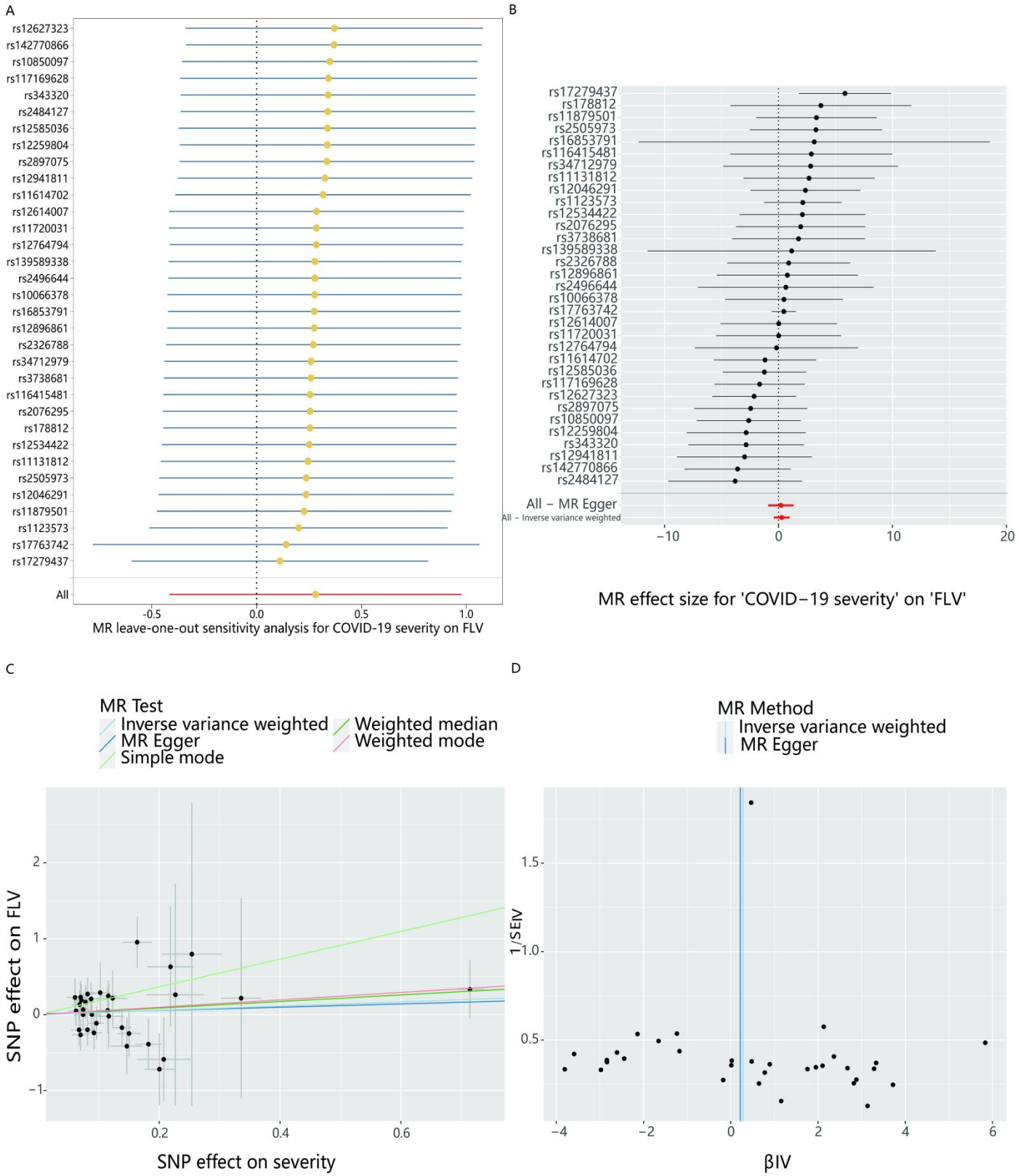


Fig. S41 The causal effect of COVID-19 severity on Frontal lobe volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

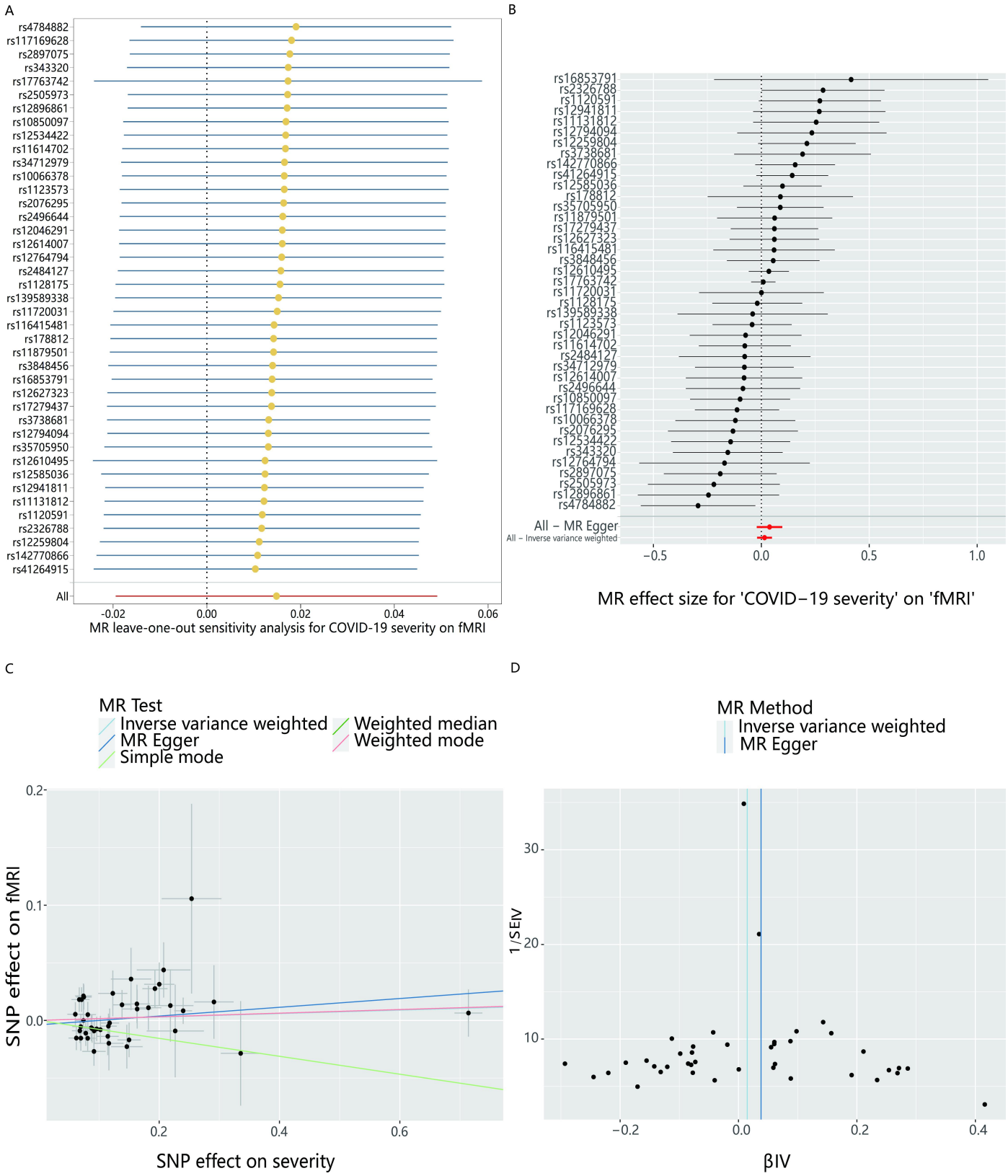


Fig. S42 The causal effect of COVID-19 severity on Functional brain measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

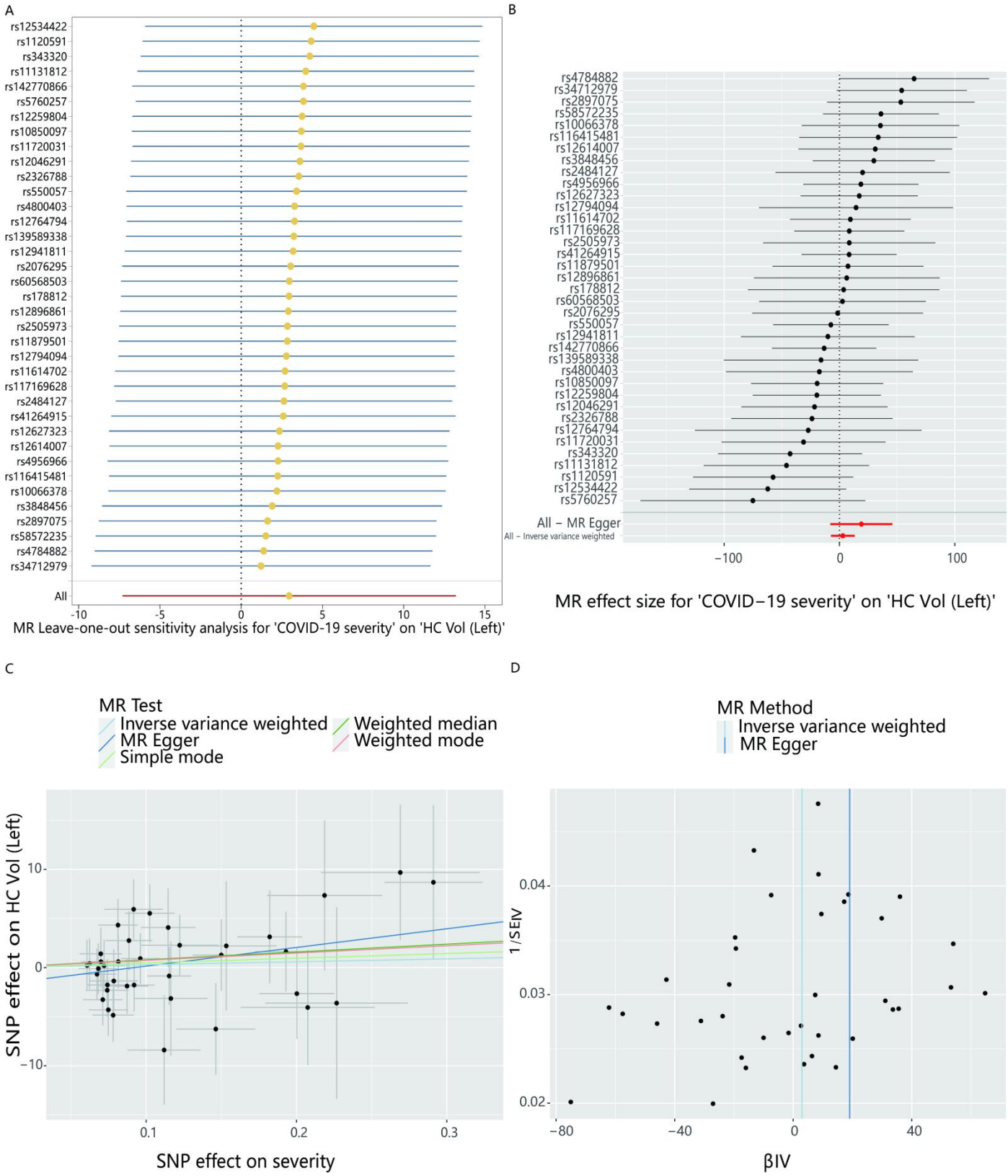


Fig. S43 The causal effect of COVID-19 severity on Left hippocampal volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

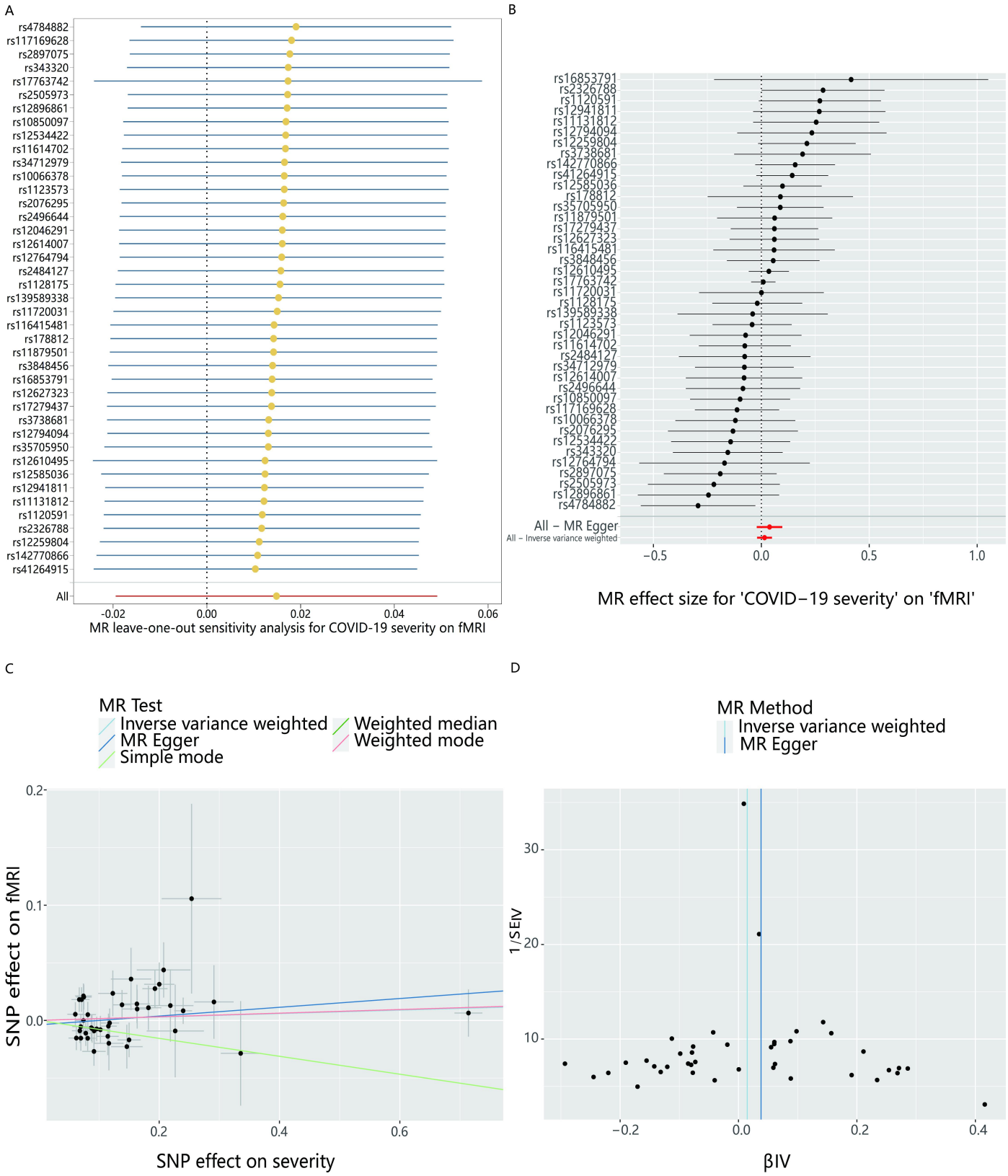


Fig. S44 The causal effect of COVID-19 severity on Right hippocampal volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

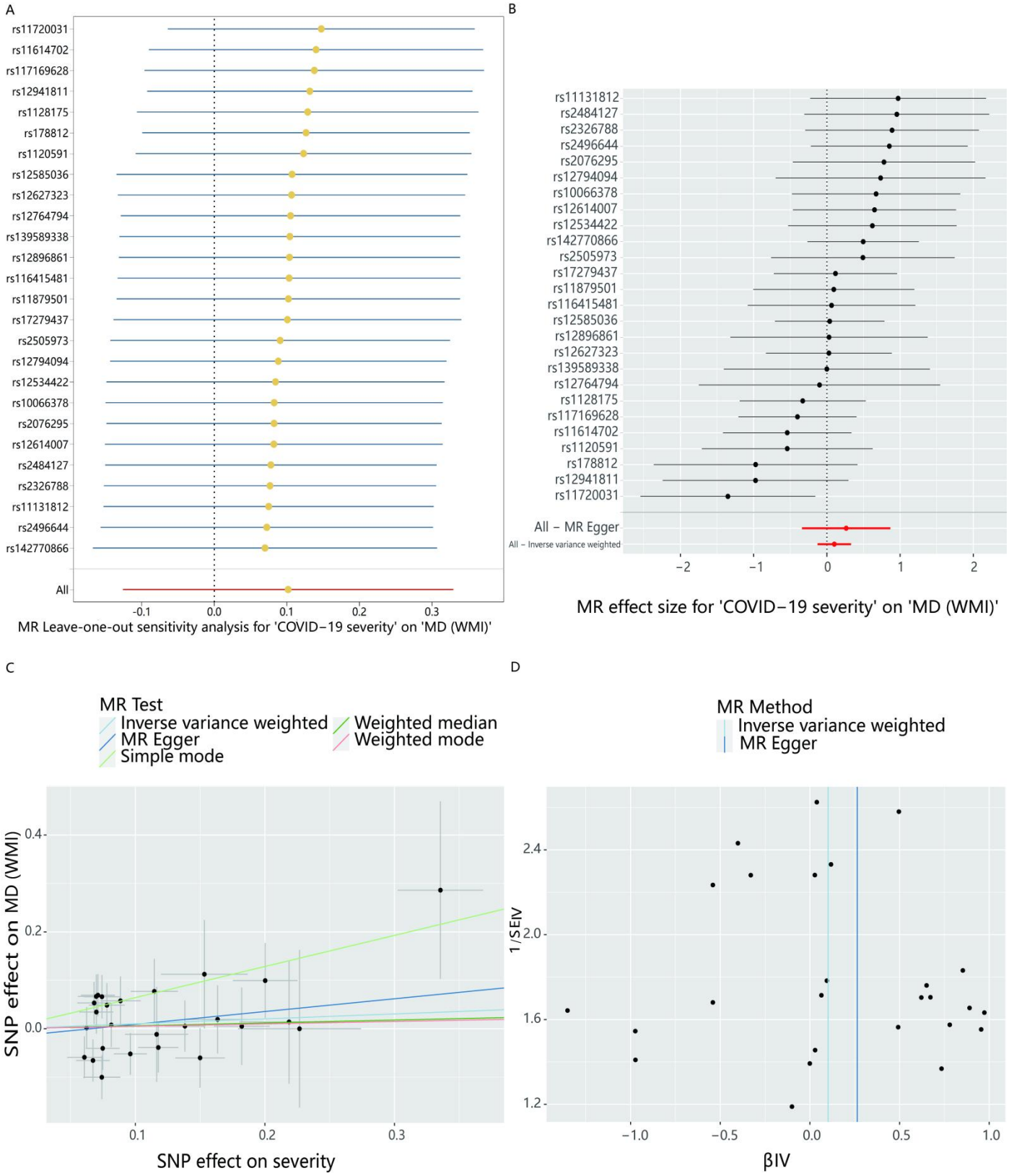


Fig. S45 The causal effect of COVID-19 severity on mean diffusivity of White matter integrity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

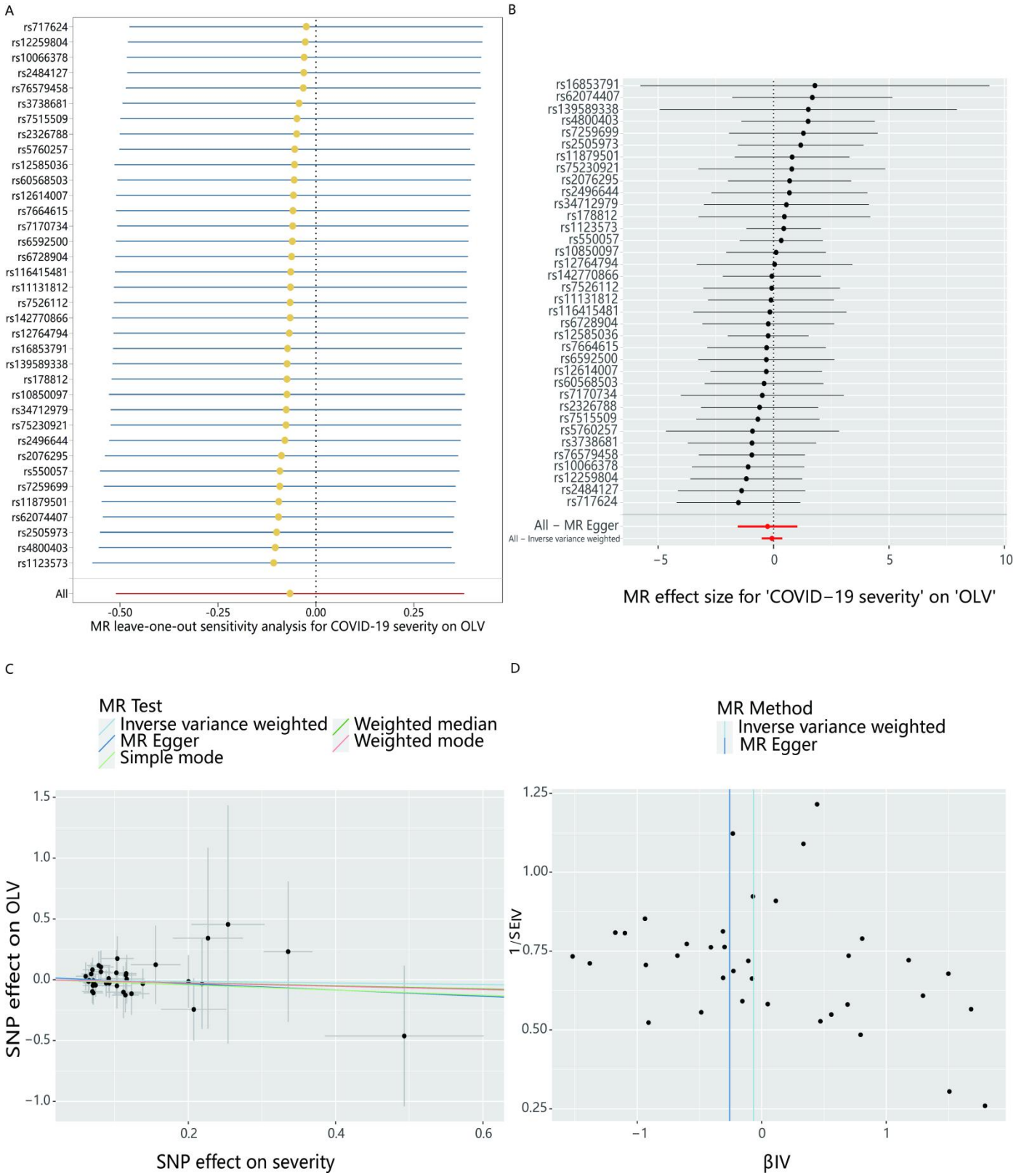


Fig. S46 The causal effect of COVID-19 severity on Occipital lobe volume measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

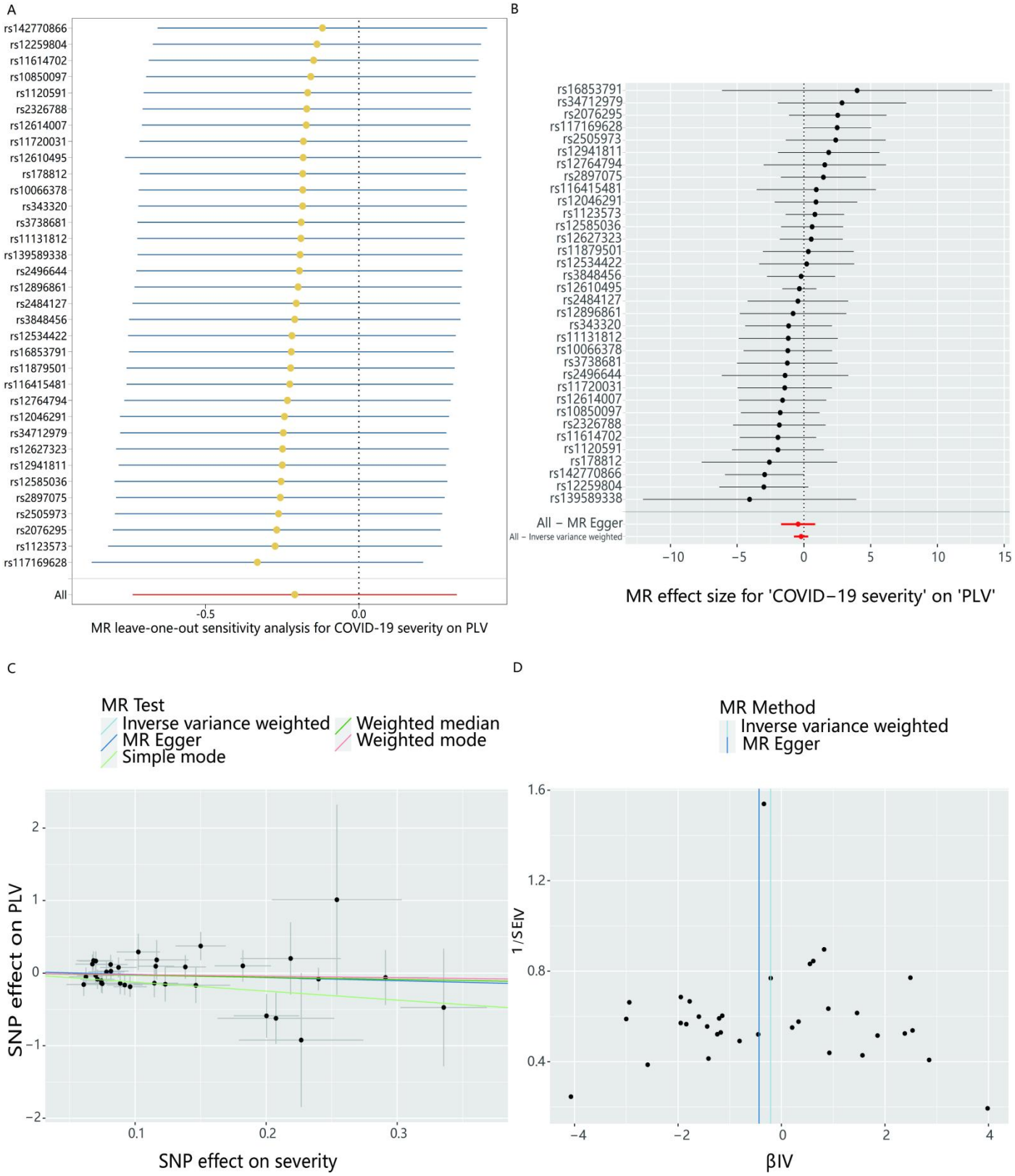


Fig. S47 The causal effect of COVID-19 severity on Parietal lobe volume measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

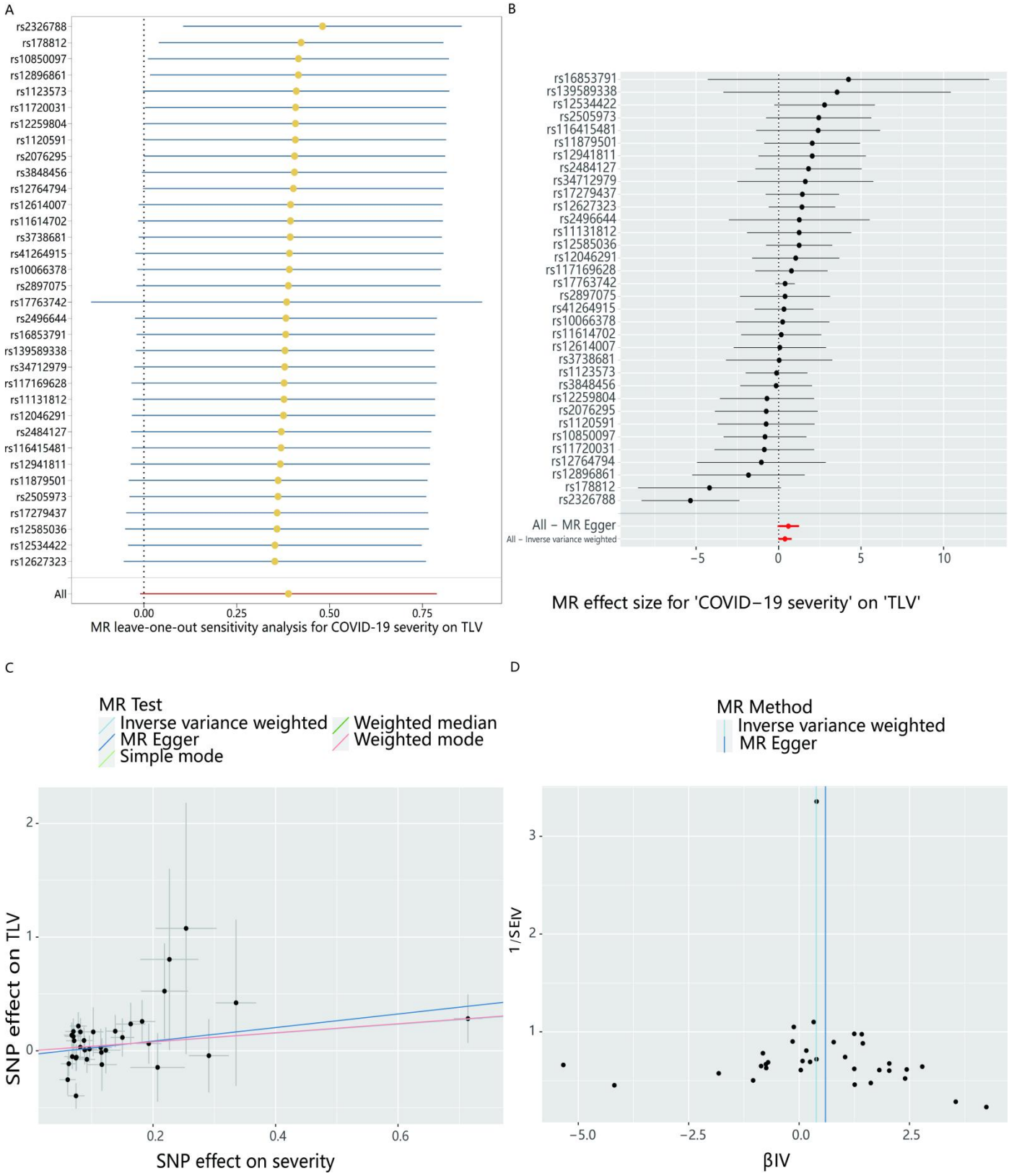


Fig. S48 The causal effect of COVID-19 severity on Temporal lobe volume measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

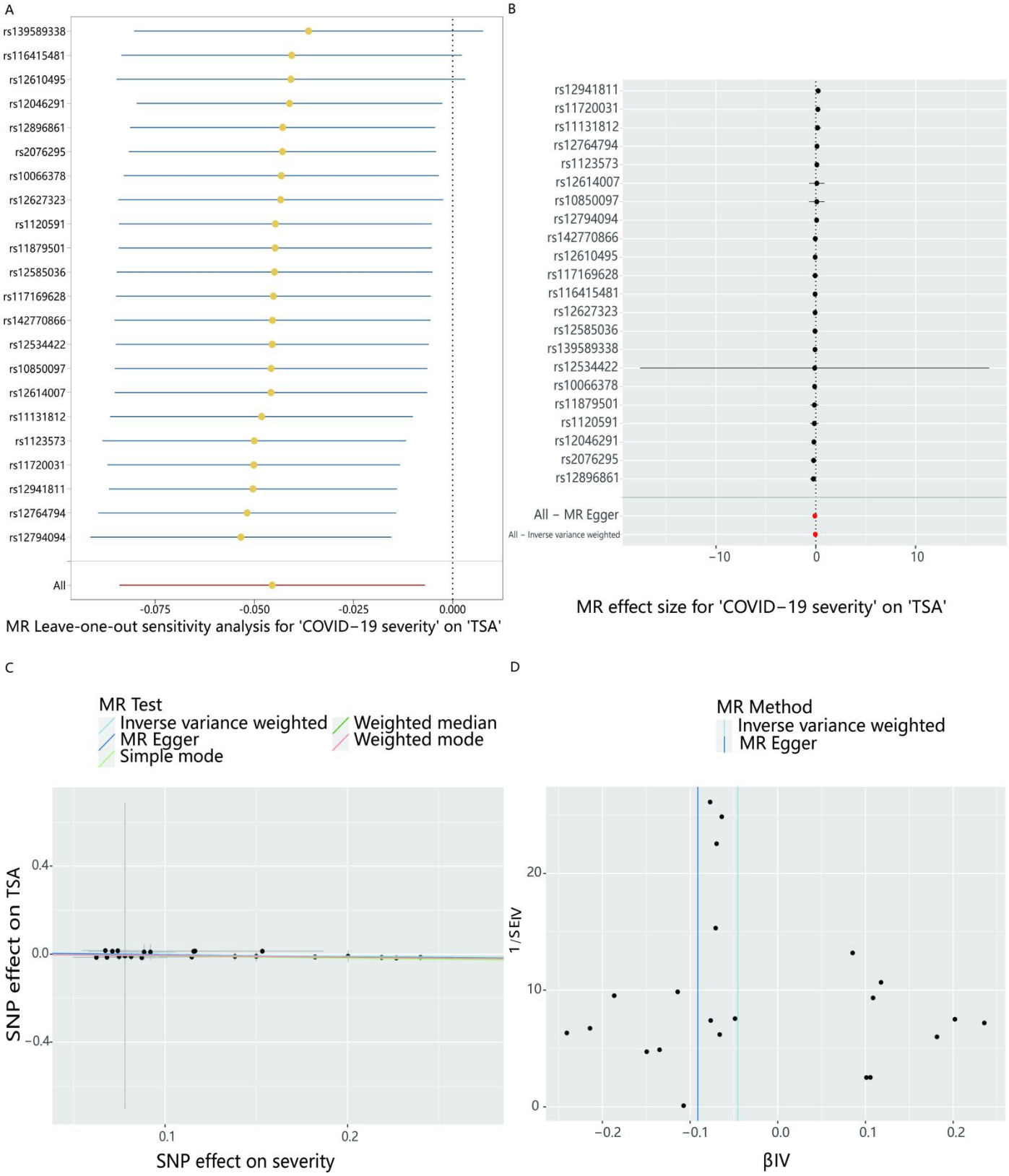


Fig. S49 The causal effect of COVID-19 severity on Total surface area measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

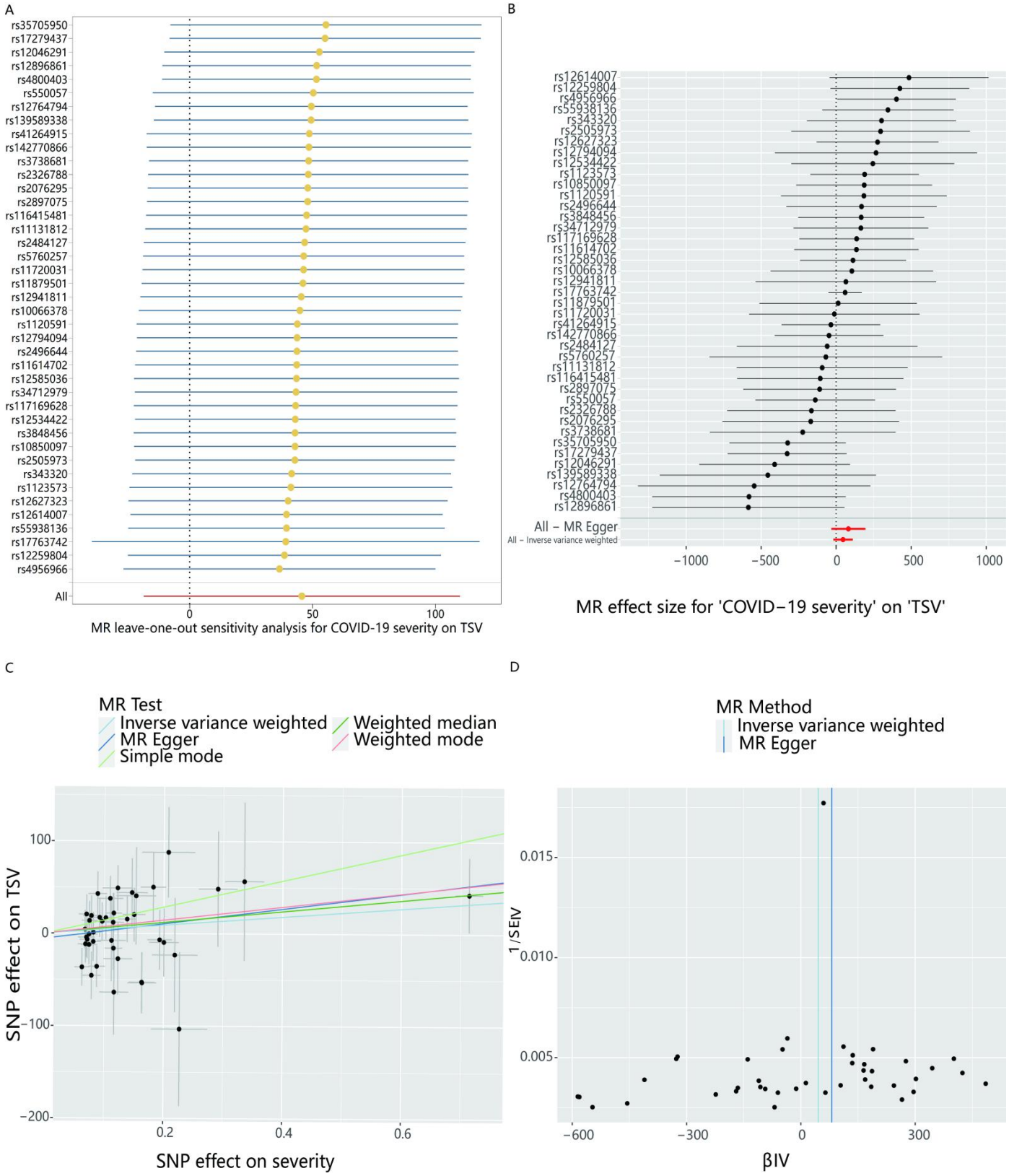


Fig. S50 The causal effect of COVID-19 severity on Total subcortical volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

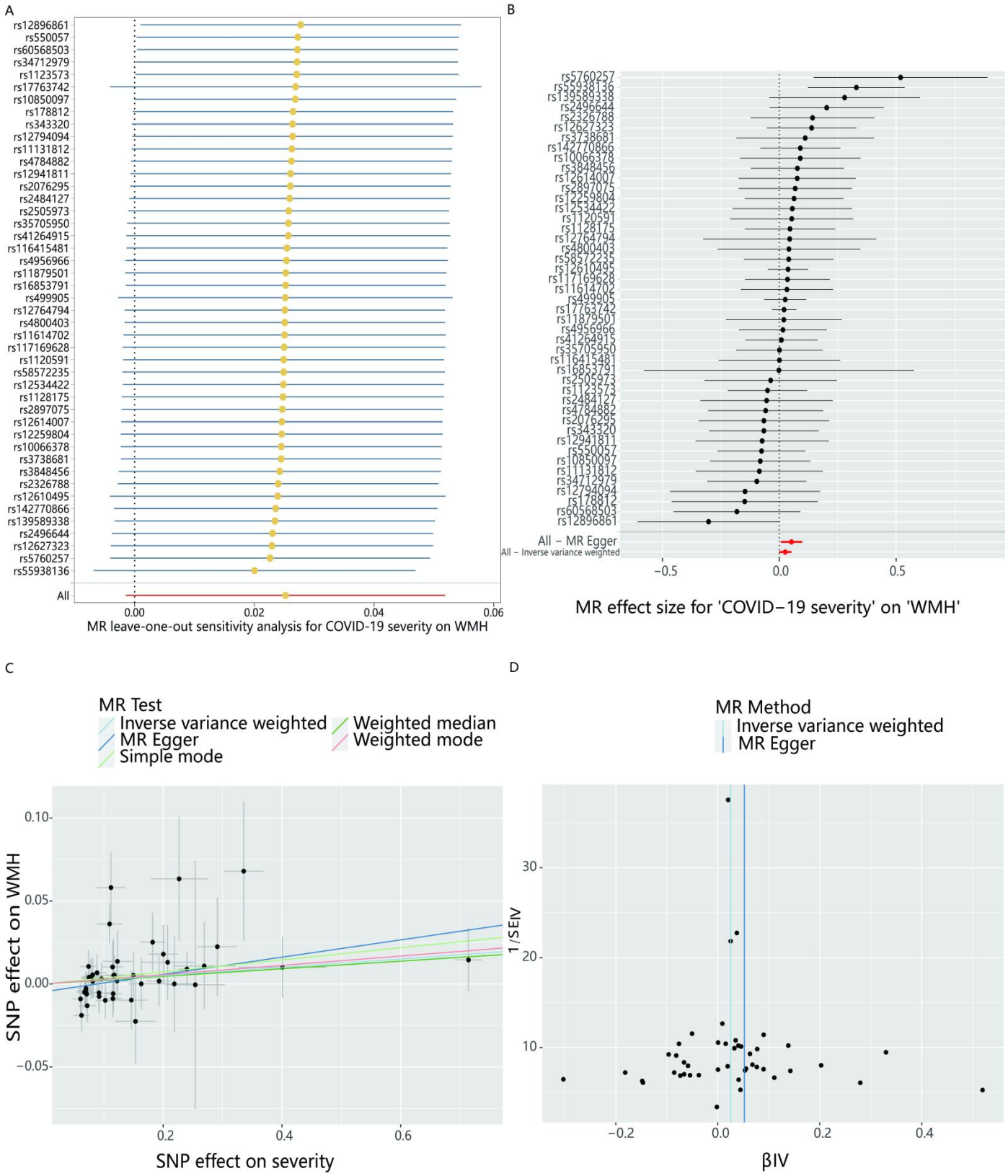
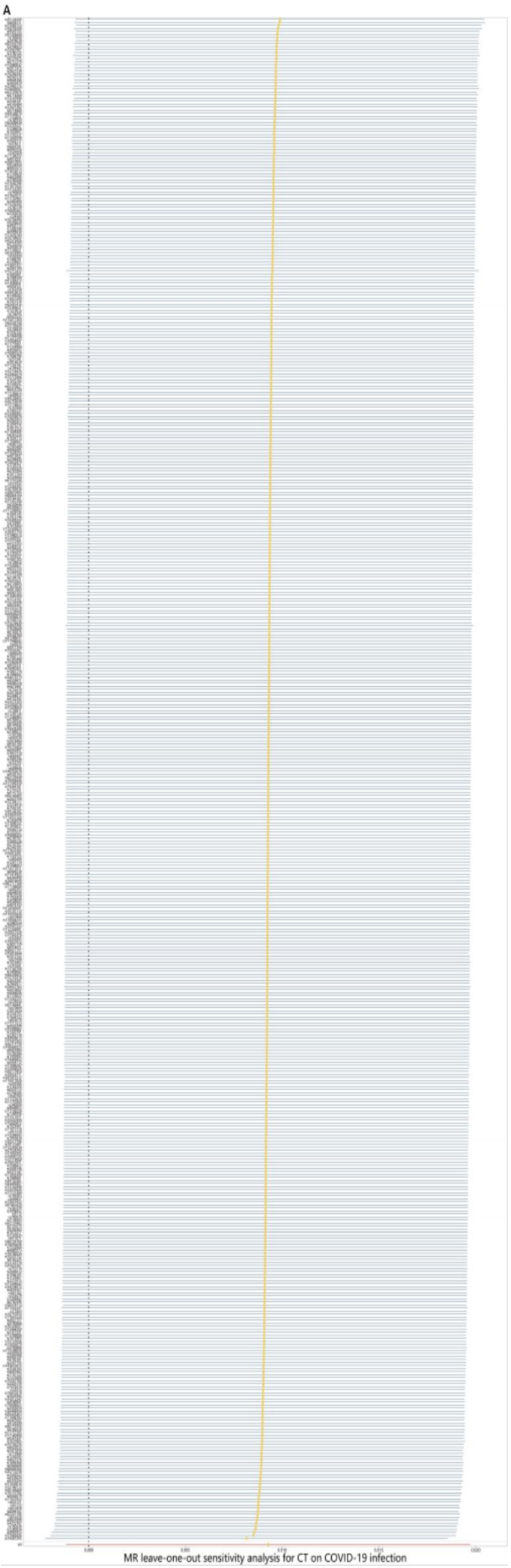
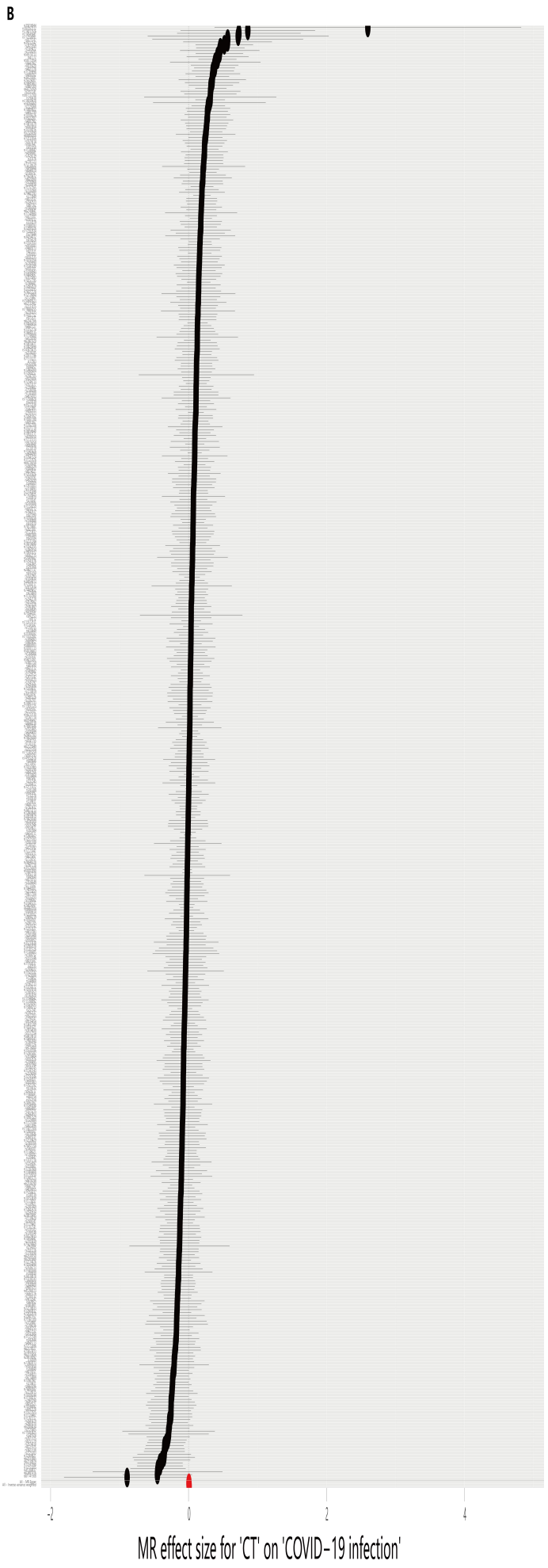


Fig. S51 The causal effect of COVID-19 severity on White matter hyperintensity measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.


A
MR leave-one-out sensitivity analysis for CT on COVID-19 infection


B
-2
0
2
4
MR effect size for 'CT' on 'COVID-19 infection'

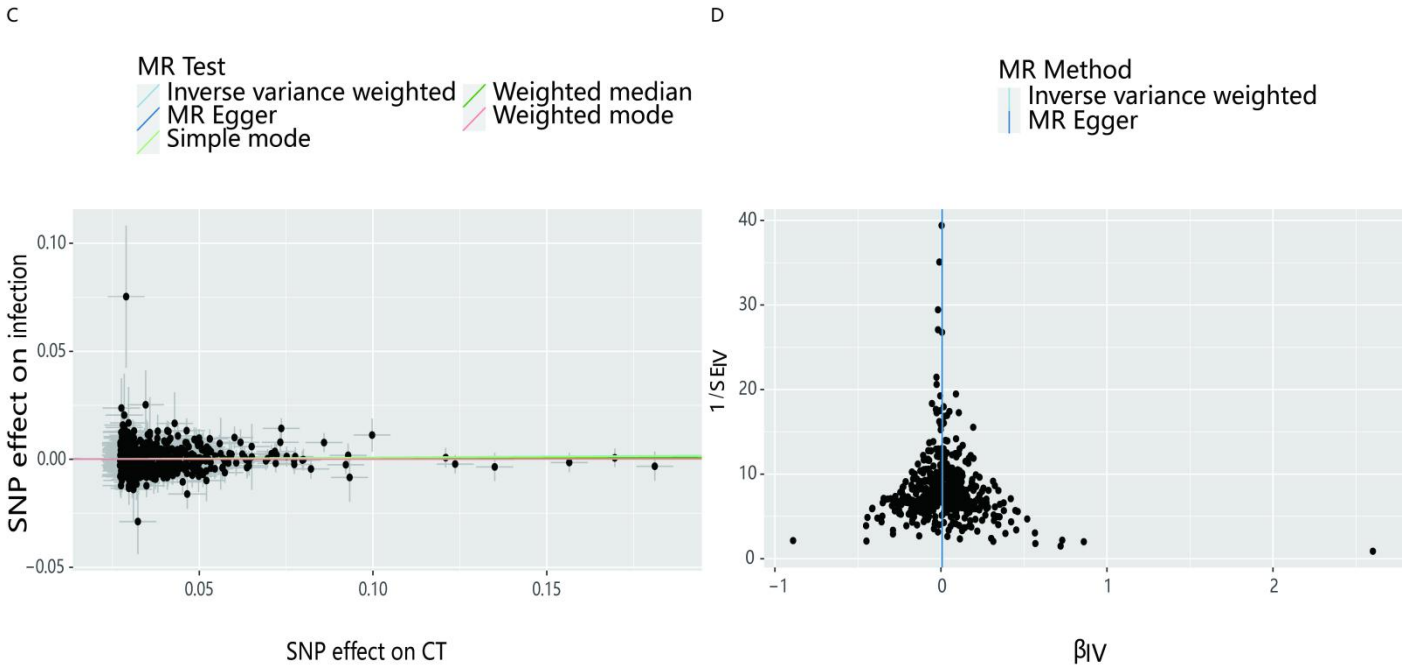


Fig. S52 The causal effect of Cortical Thickness Volume on COVID-19 infection. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

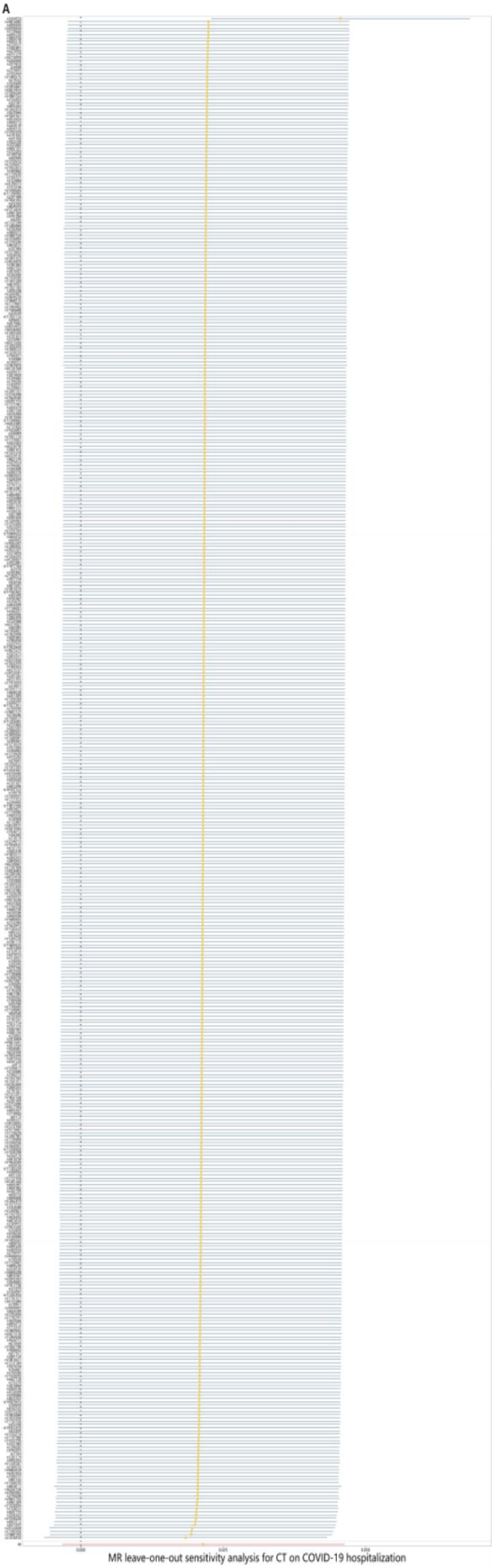
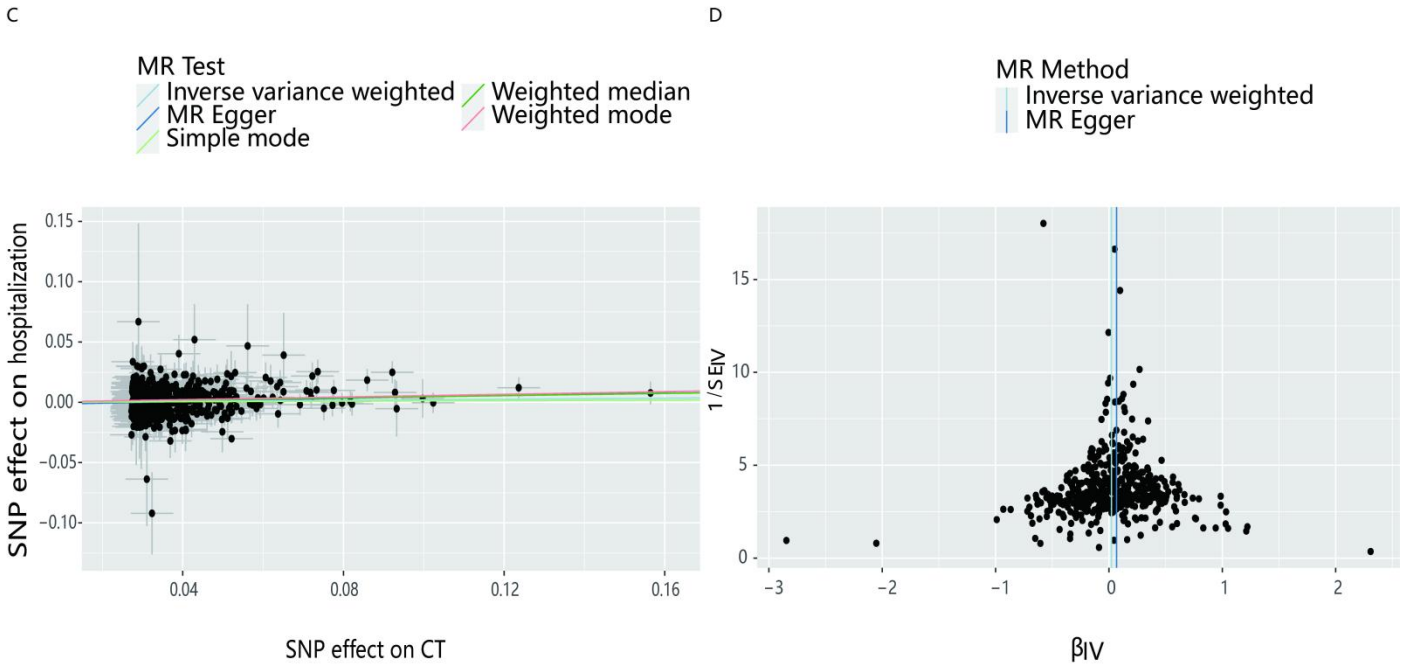
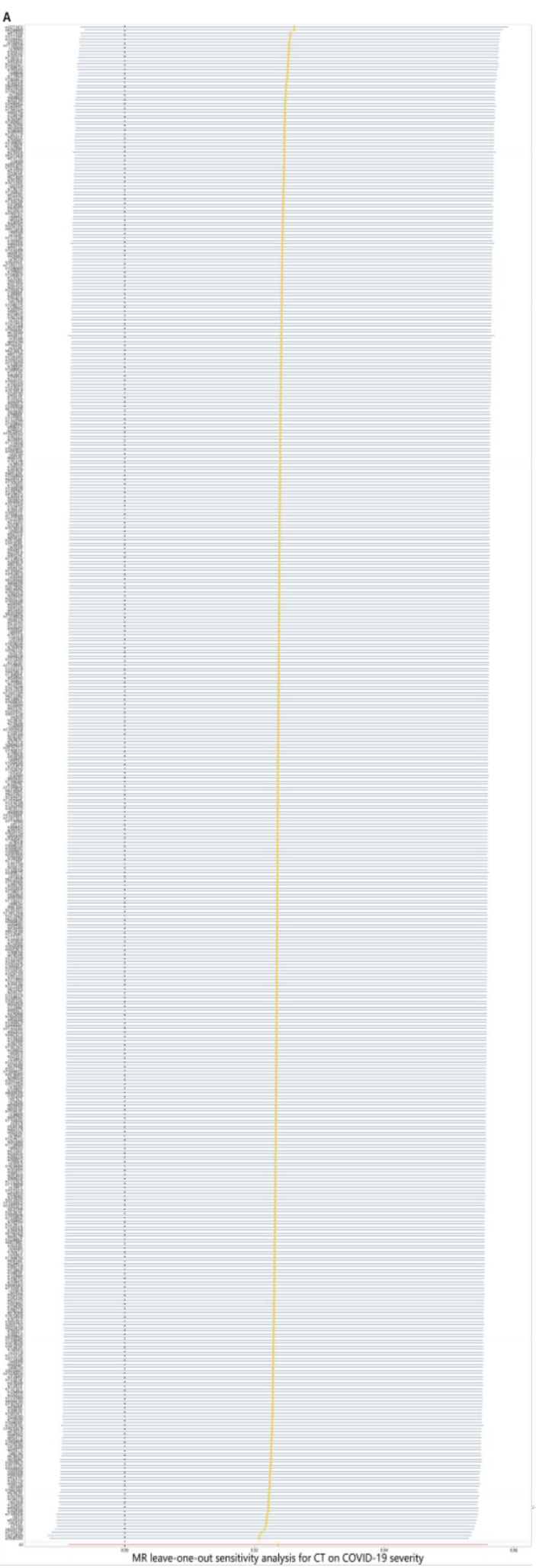

A
MR leave-one-out sensitivity analysis for CT on COVID-19 hospitalization

Fig. 1



S53 The causal effect of Cortical Thickness Volume on COVID-19 hospitalization. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.


A
MR leave-one-out sensitivity analysis for CT on COVID-19 severity


B
0
10
20
MR effect size for 'CT' on 'COVID-19 severity'

1

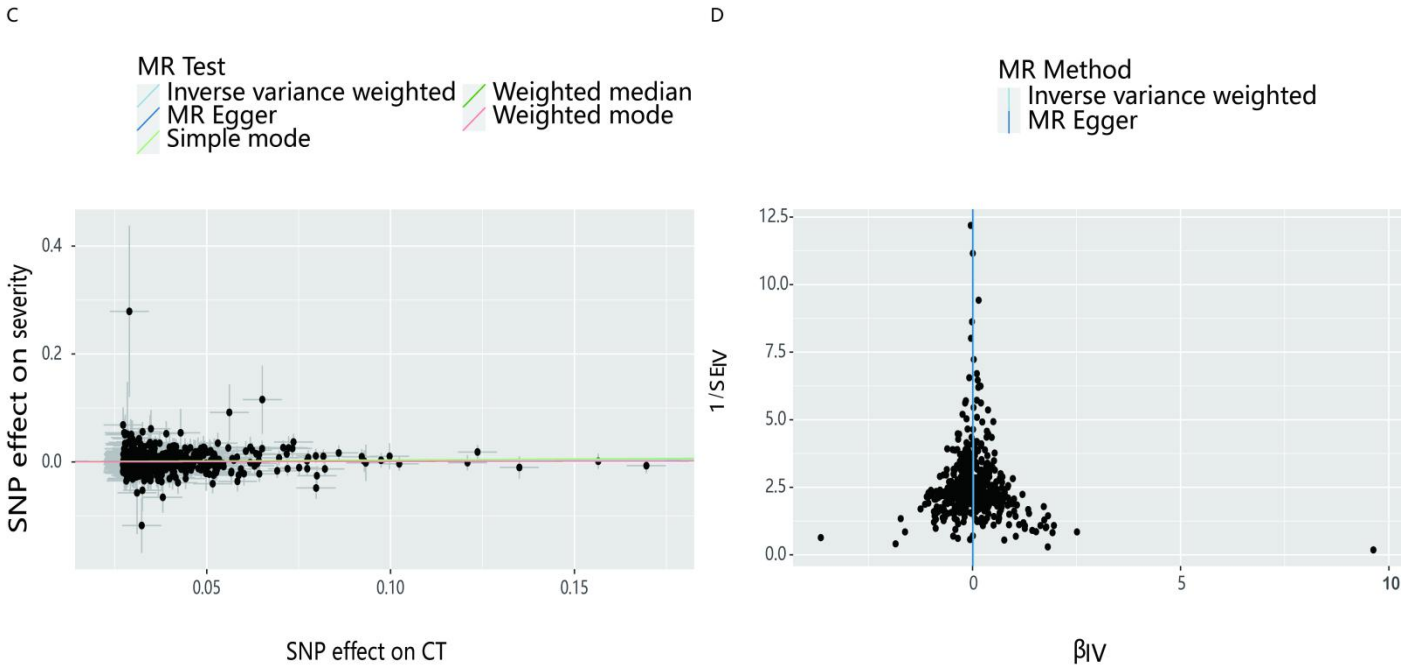


Fig. S54 The causal effect of Cortical Thickness Volume on COVID-19 severity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

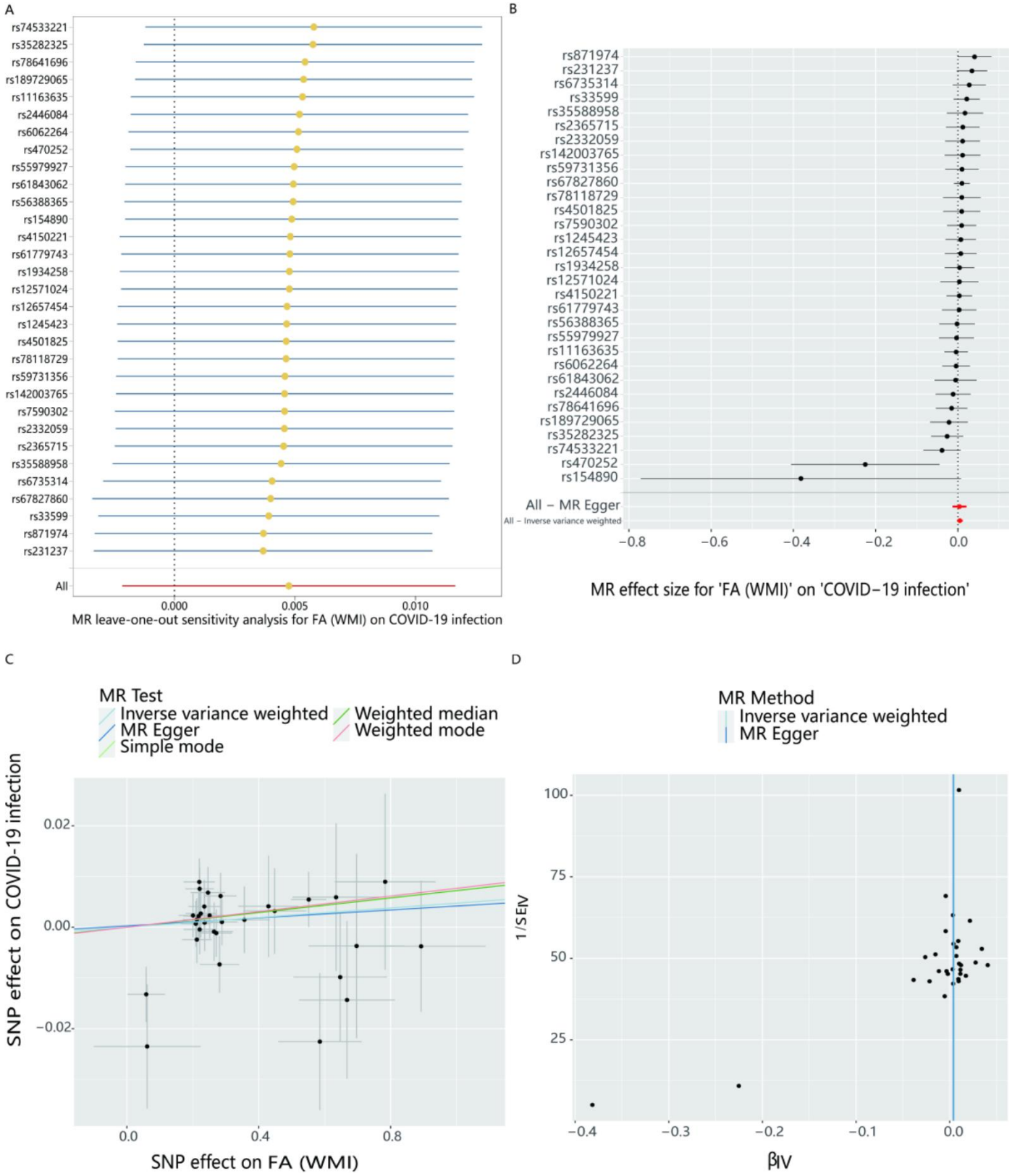


Fig. S55 The causal effect of fractional anisotropy of White matter integrity on COVID-19 infection. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

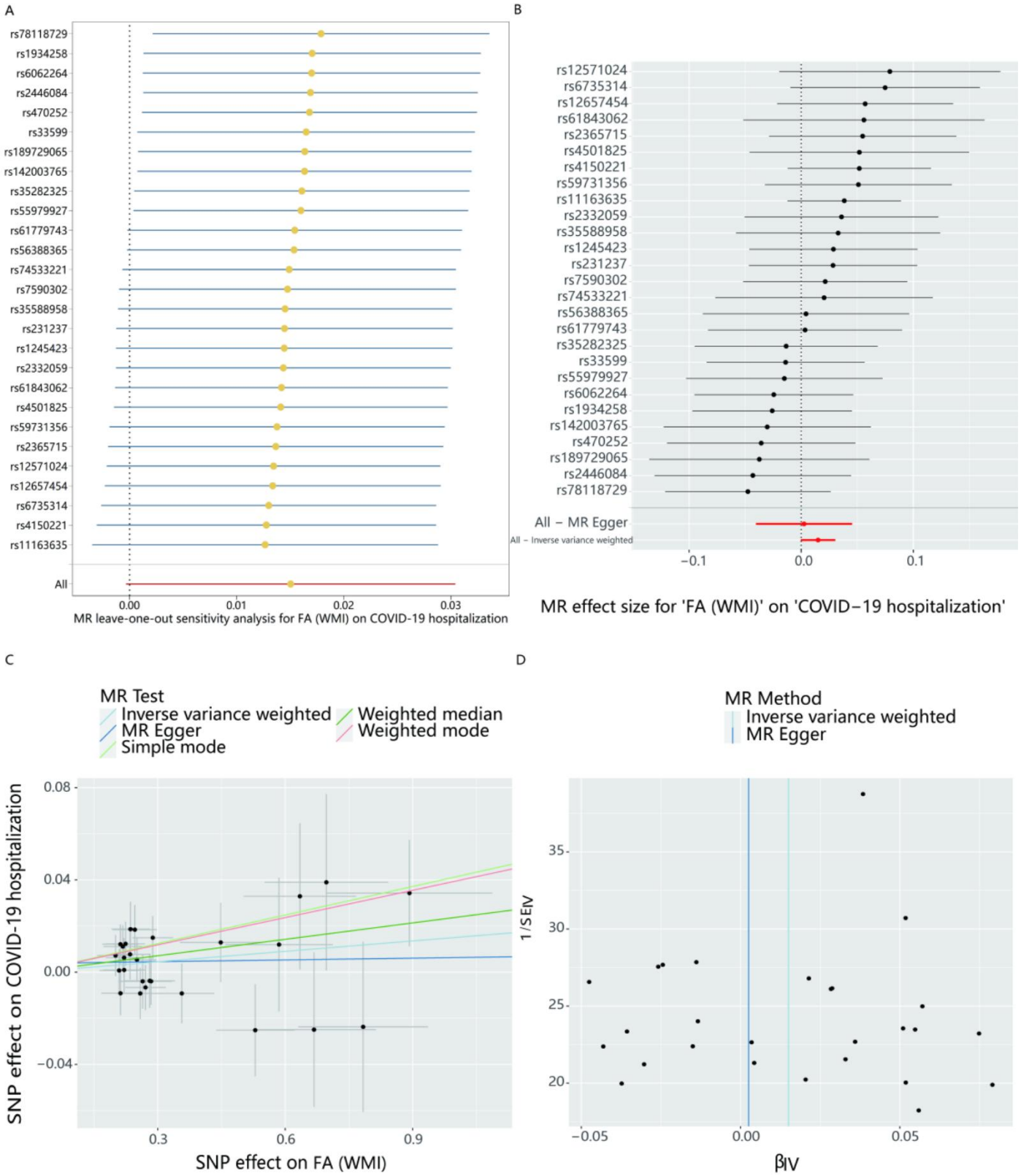


Fig. S56 The causal effect of fractional anisotropy of White matter integrity on COVID-19 hospitalization. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

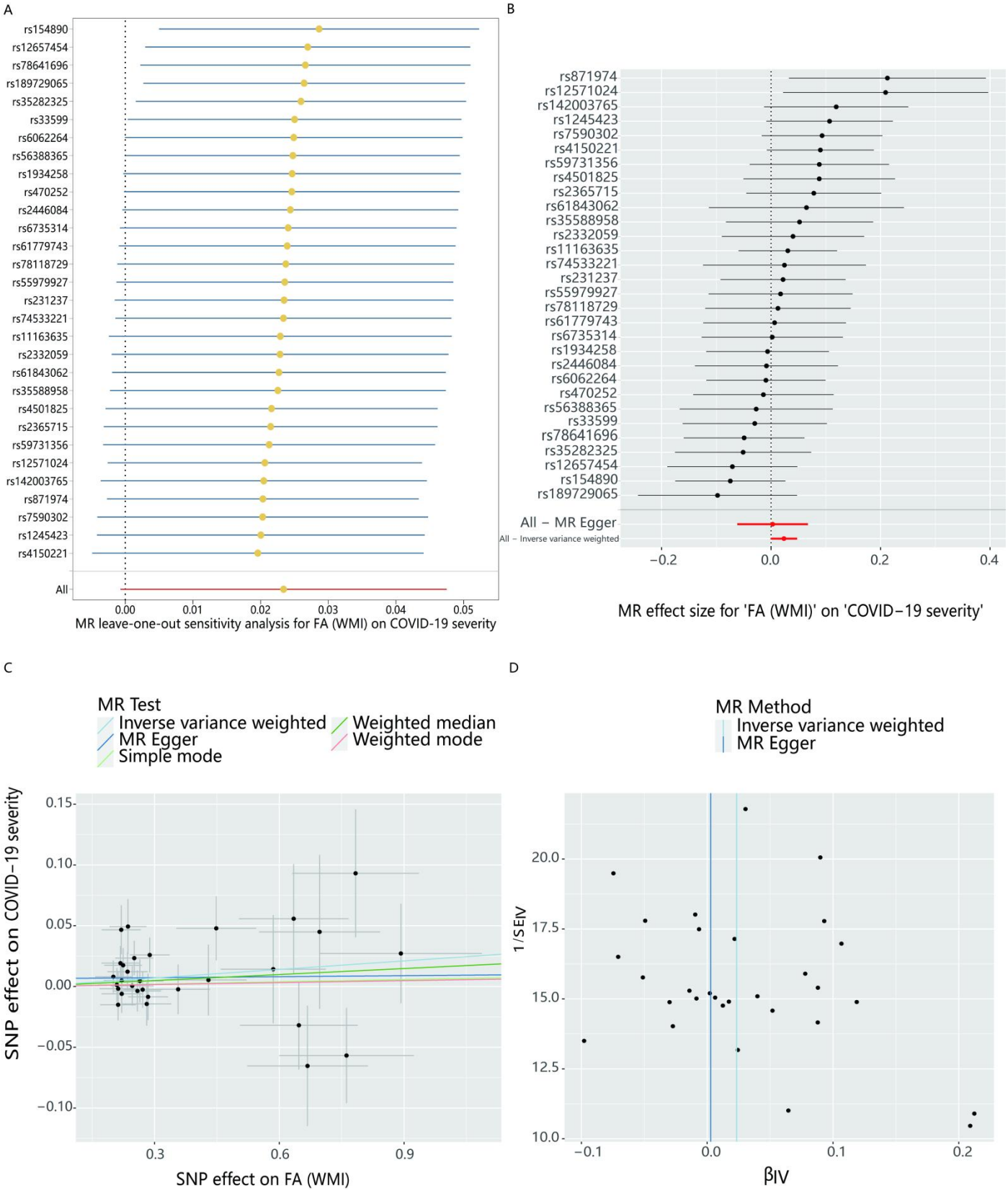


Fig. S57 The causal effect of fractional anisotropy of White matter integrity on COVID-19 severity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

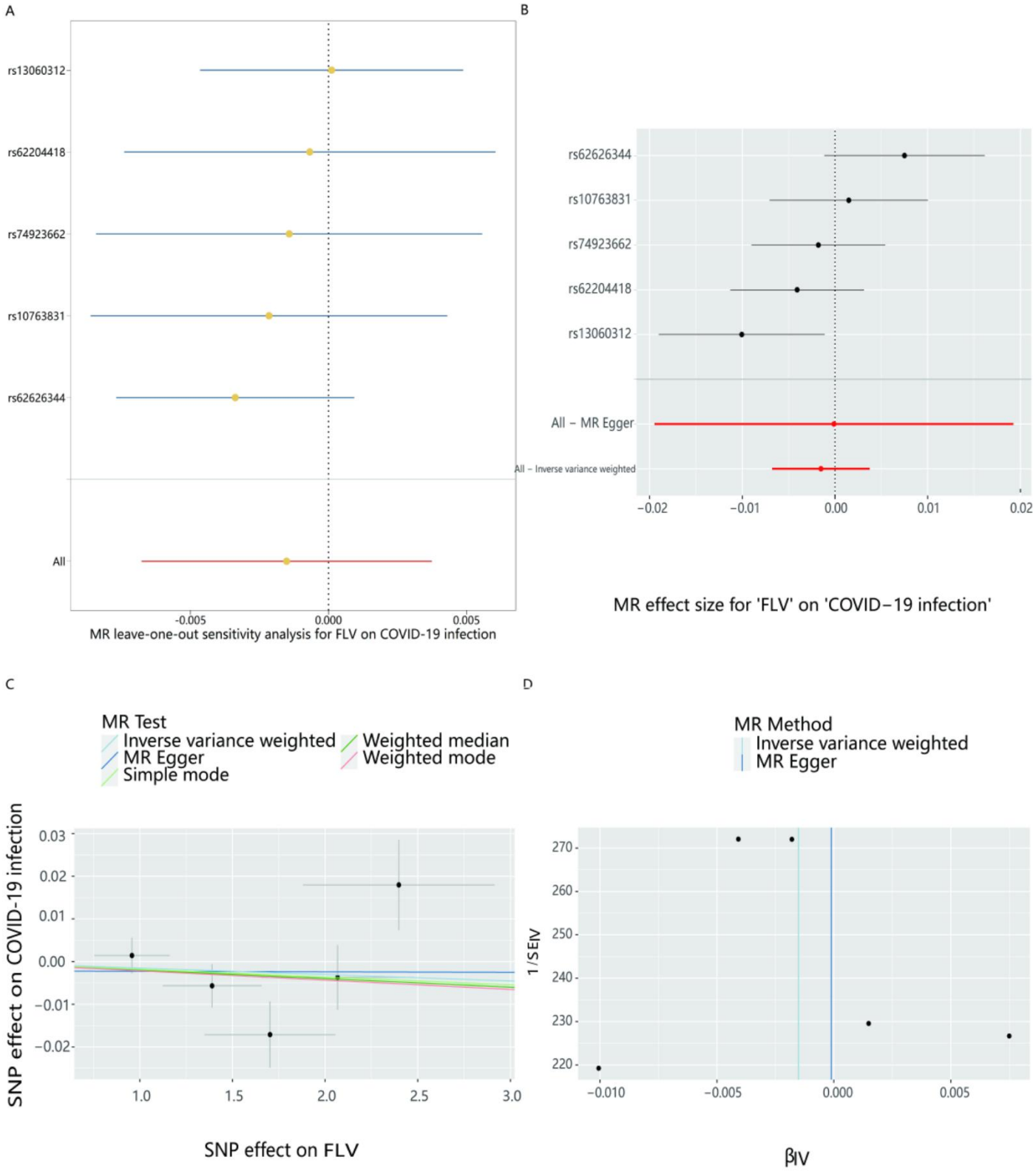


Fig. S58 The causal effect of Frontal lobe volume on COVID-19 infection. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

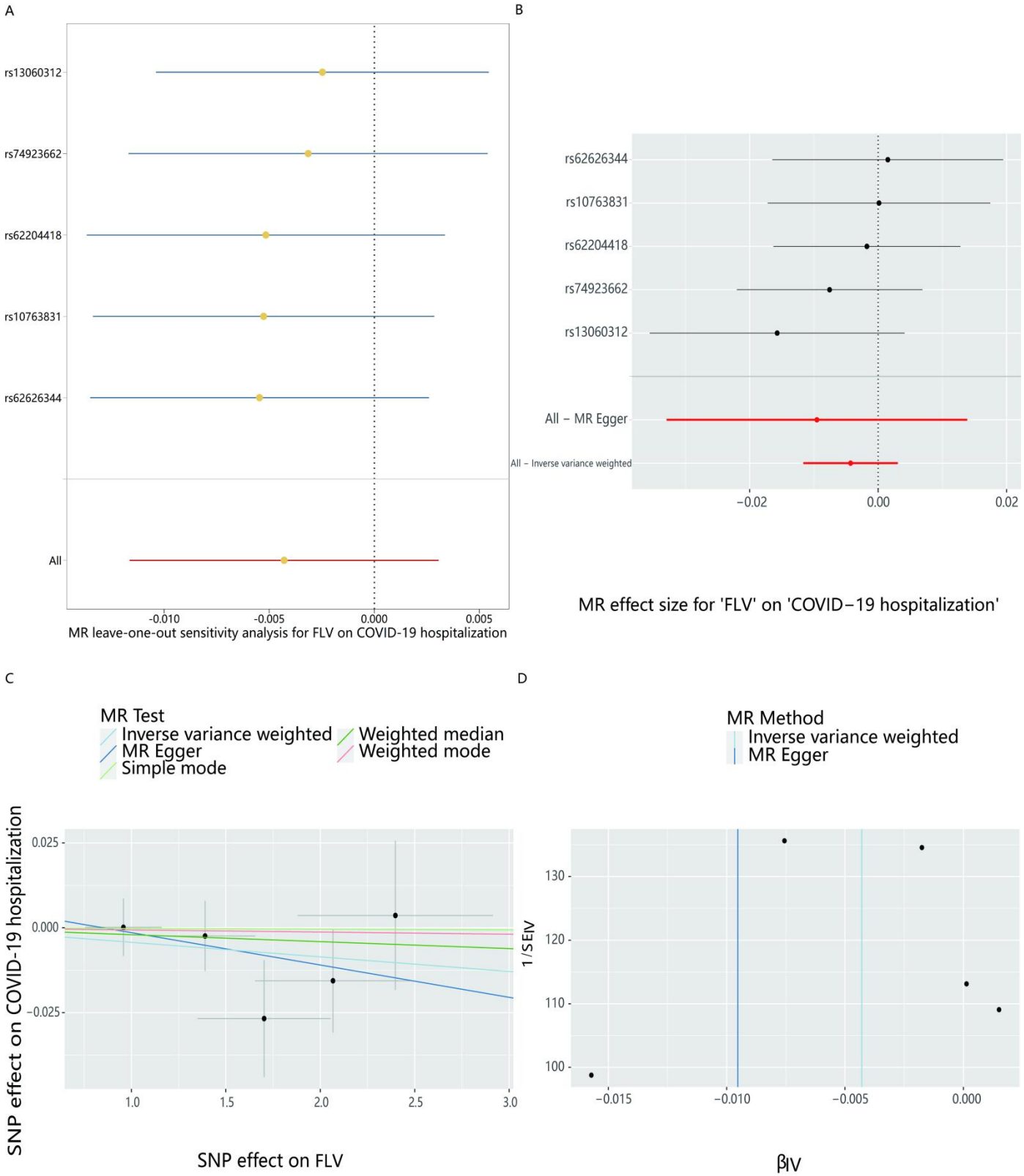


Fig. S59 The causal effect of Frontal lobe volume on COVID-19 hospitalization. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

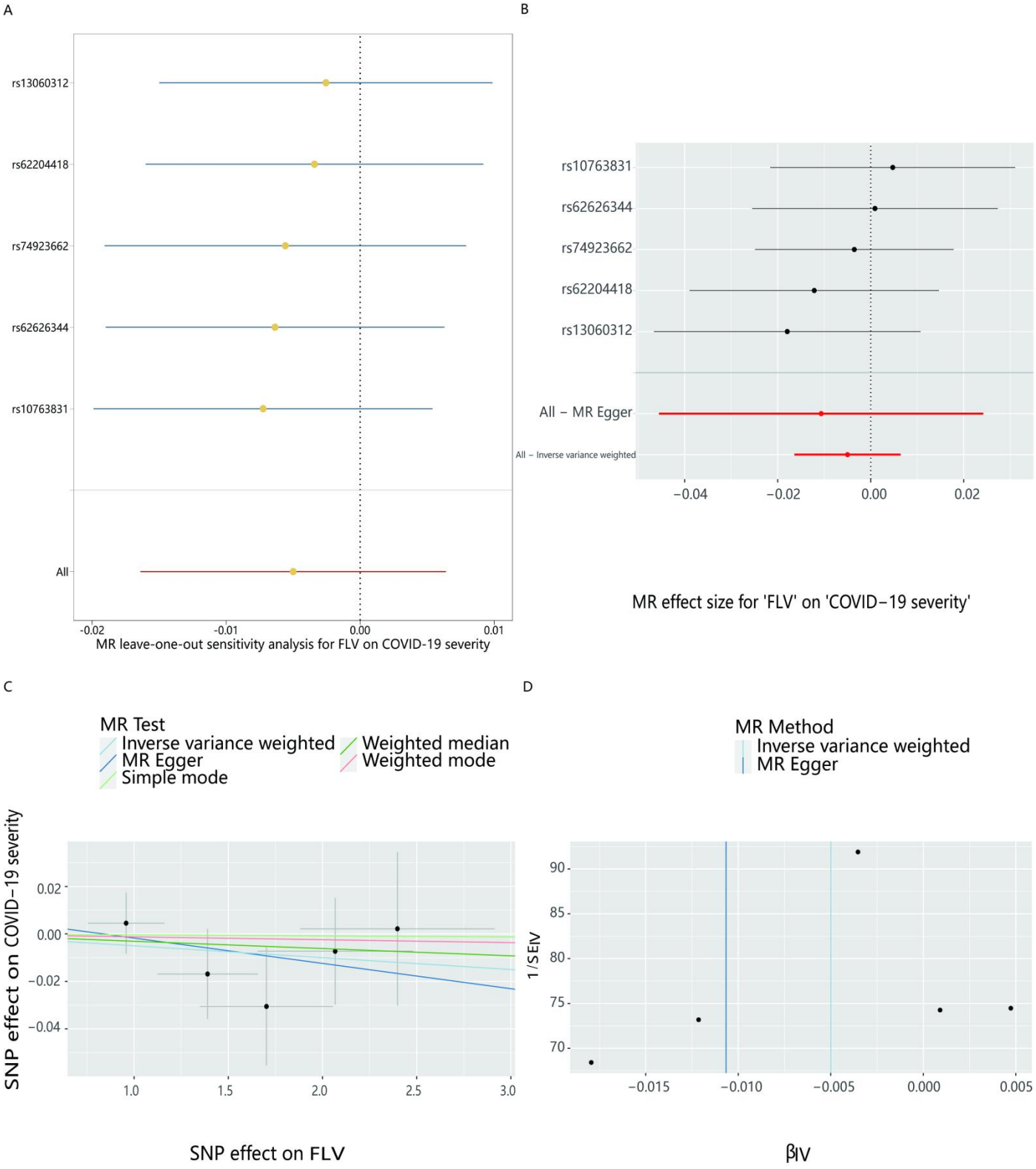


Fig. S60 The causal effect of Frontal lobe volume on COVID-19 severity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

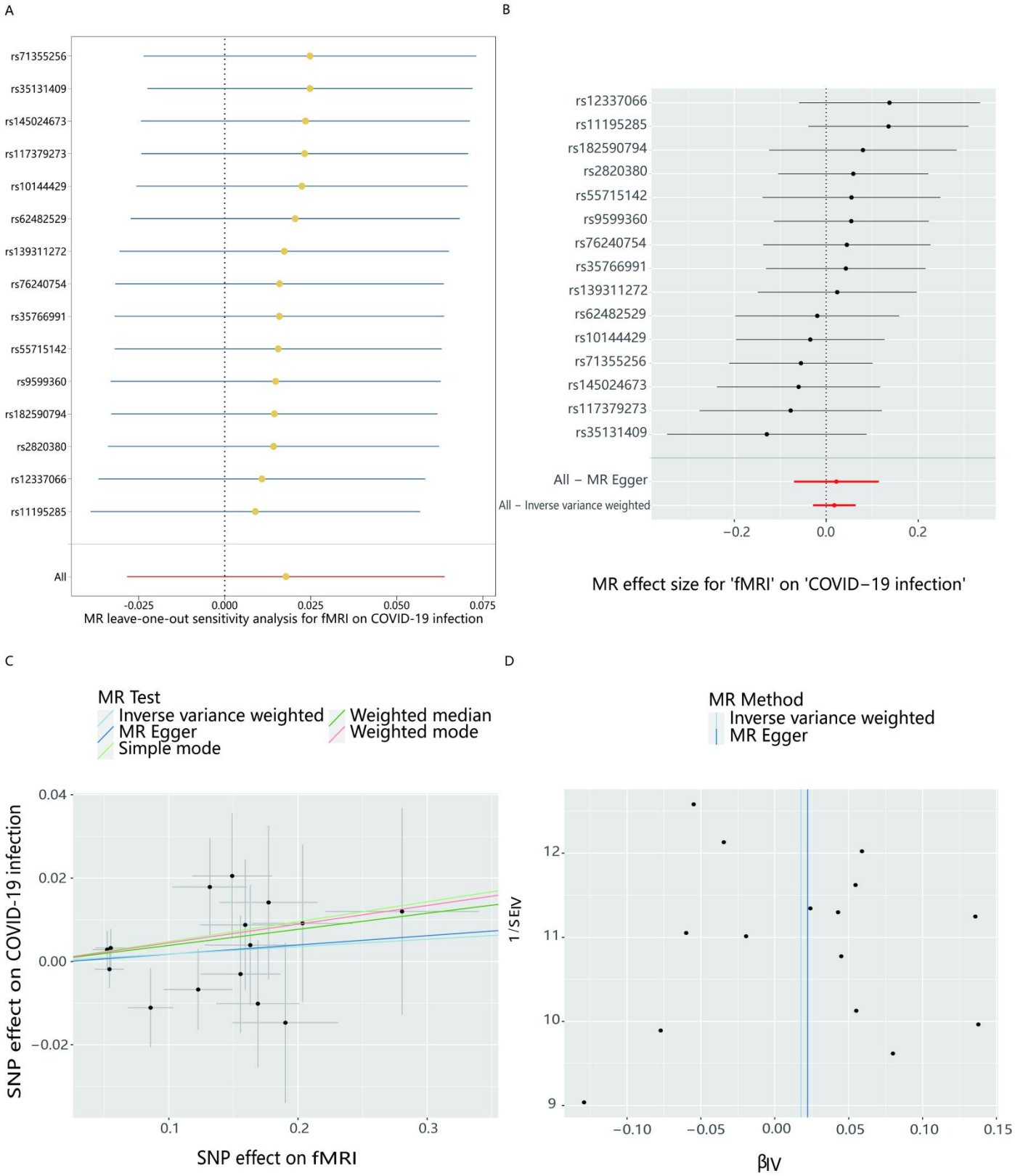


Fig. S61 The causal effect of Functional brain measurement on COVID-19 infection. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

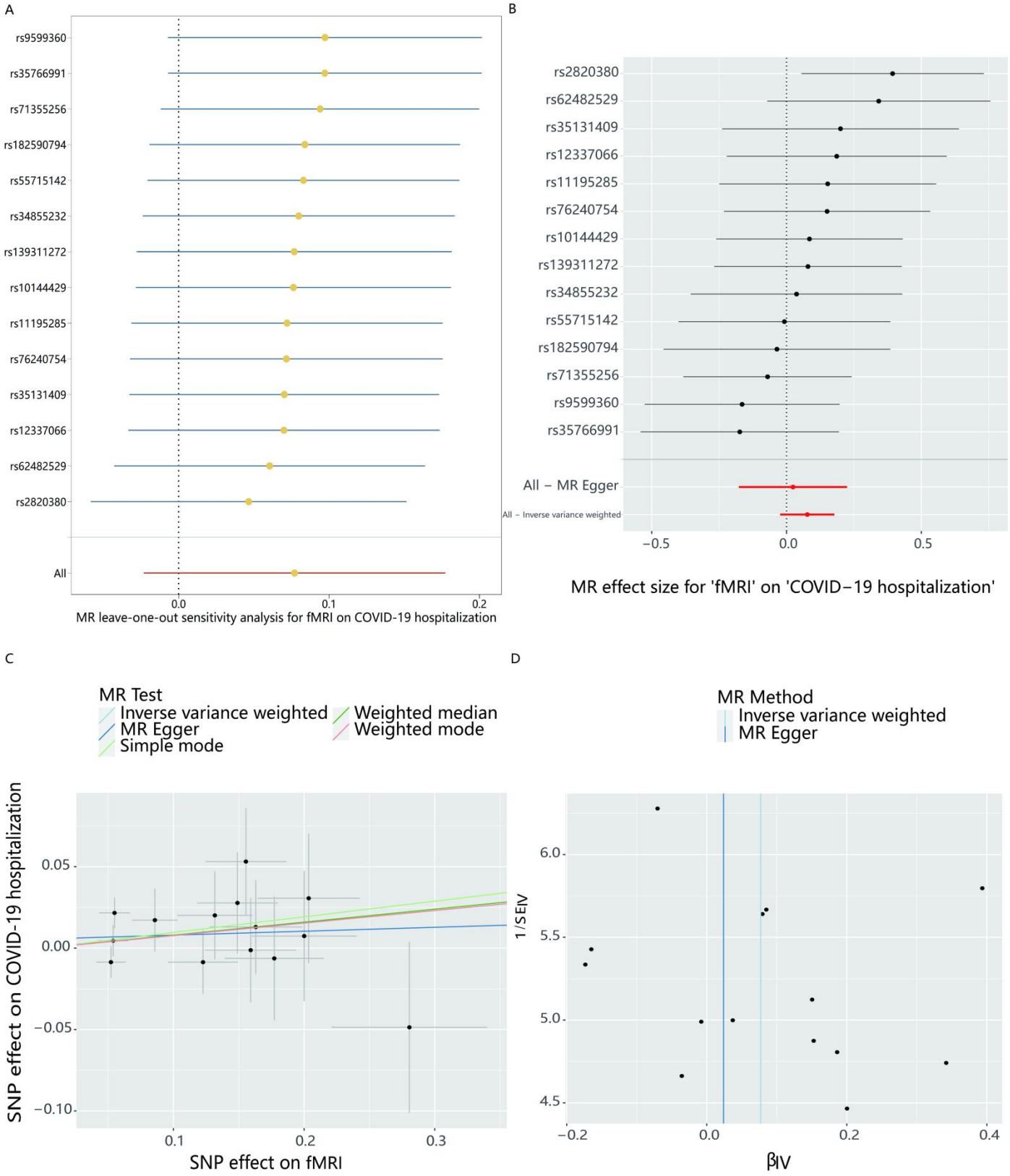


Fig. S62 The causal effect of Functional brain measurement on COVID-19 hospitalization. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

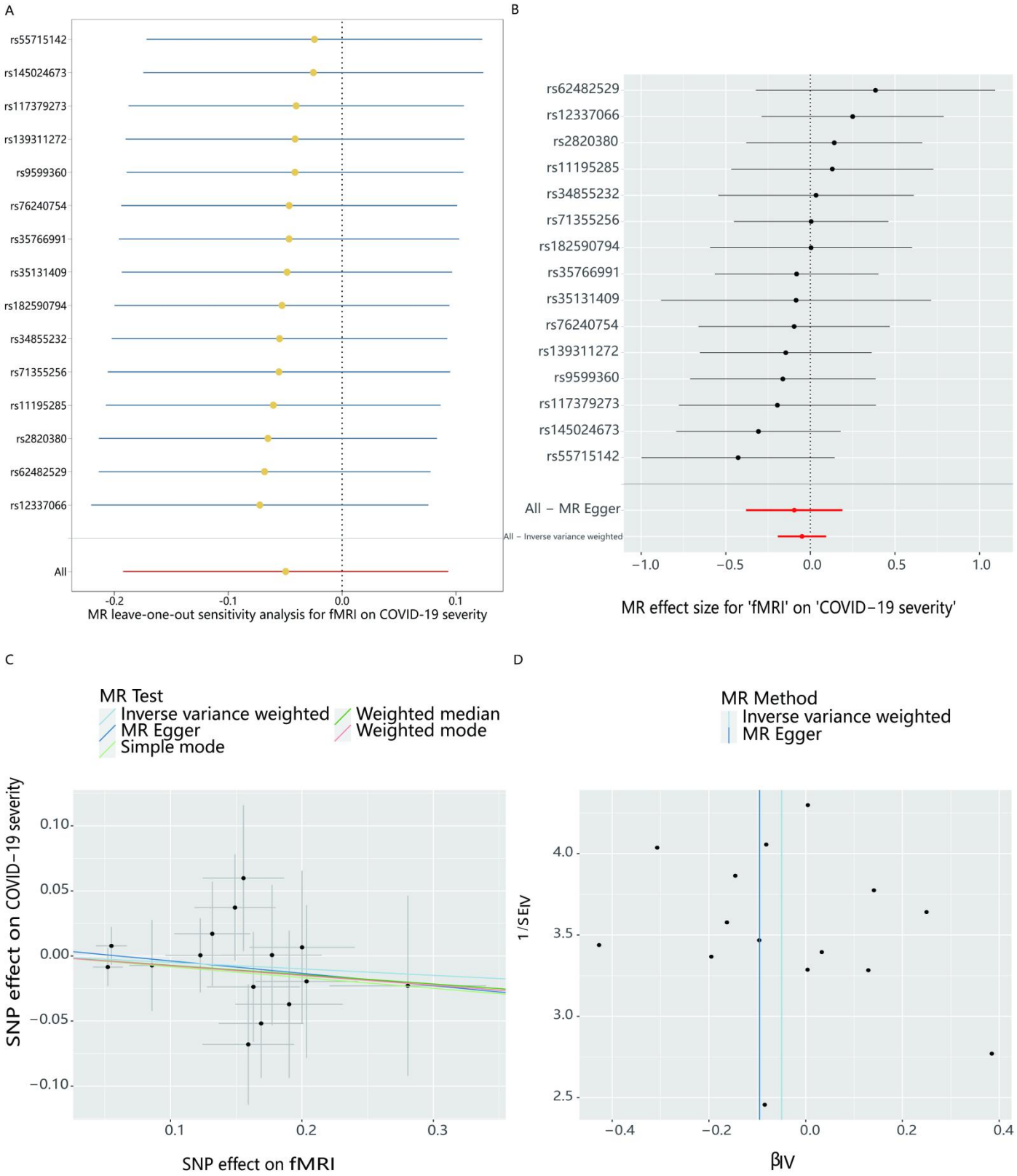


Fig. S63 The causal effect of Functional brain measurement on COVID-19 severity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

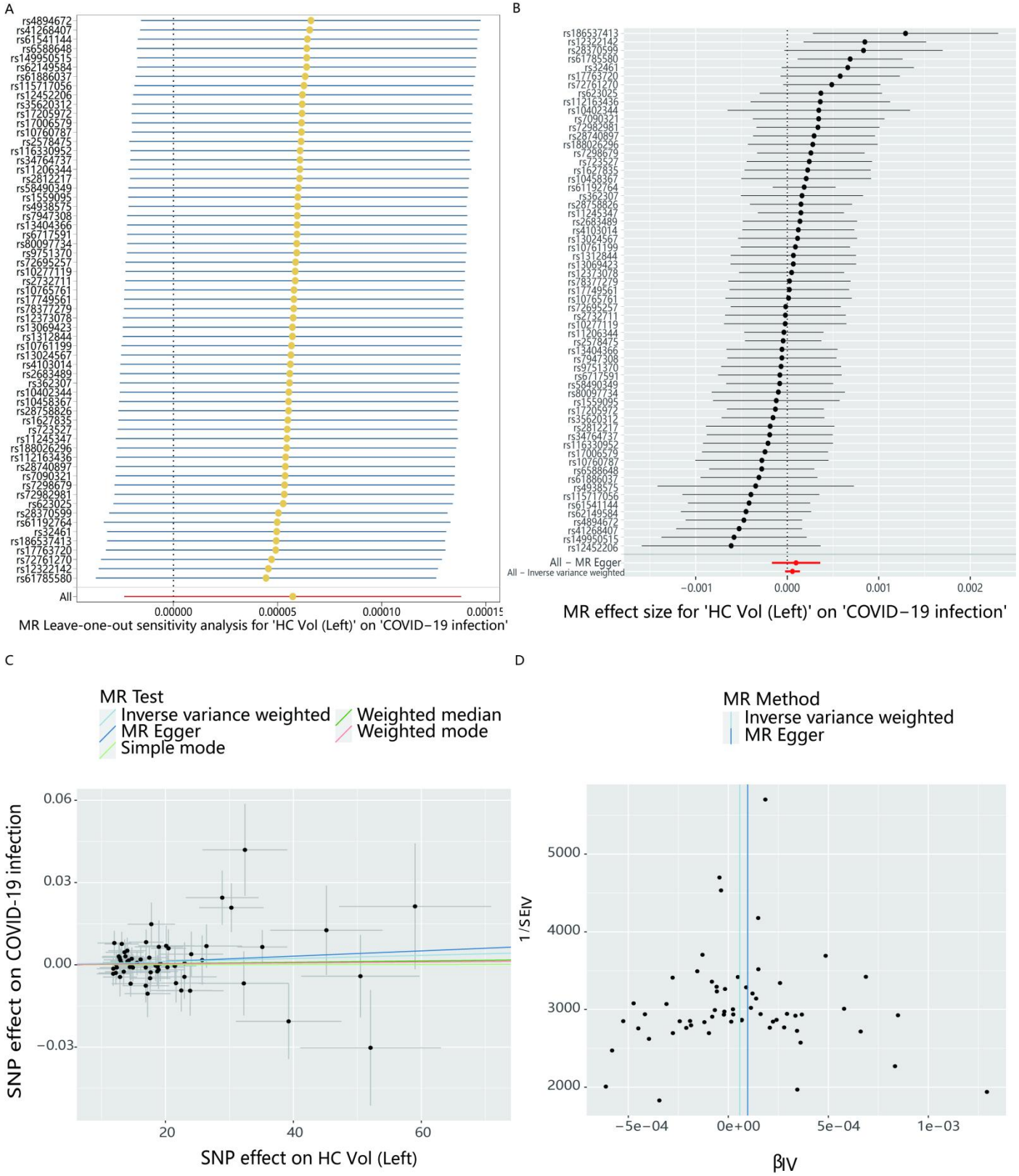


Fig. S64 The causal effect of Left hippocampal volume on COVID-19 infection. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

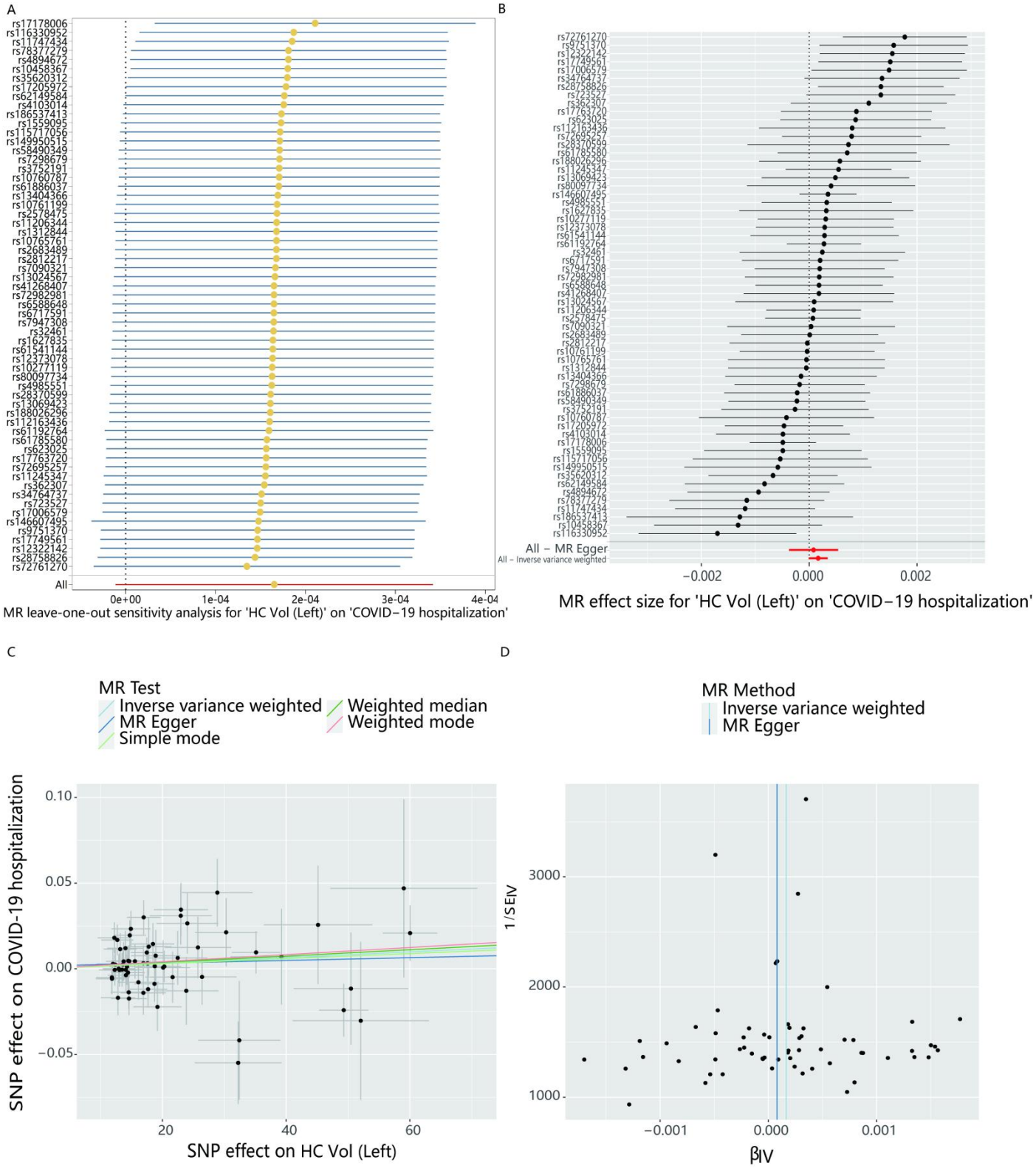


Fig. S65 The causal effect of Left hippocampal volume on COVID-19 hospitalization. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

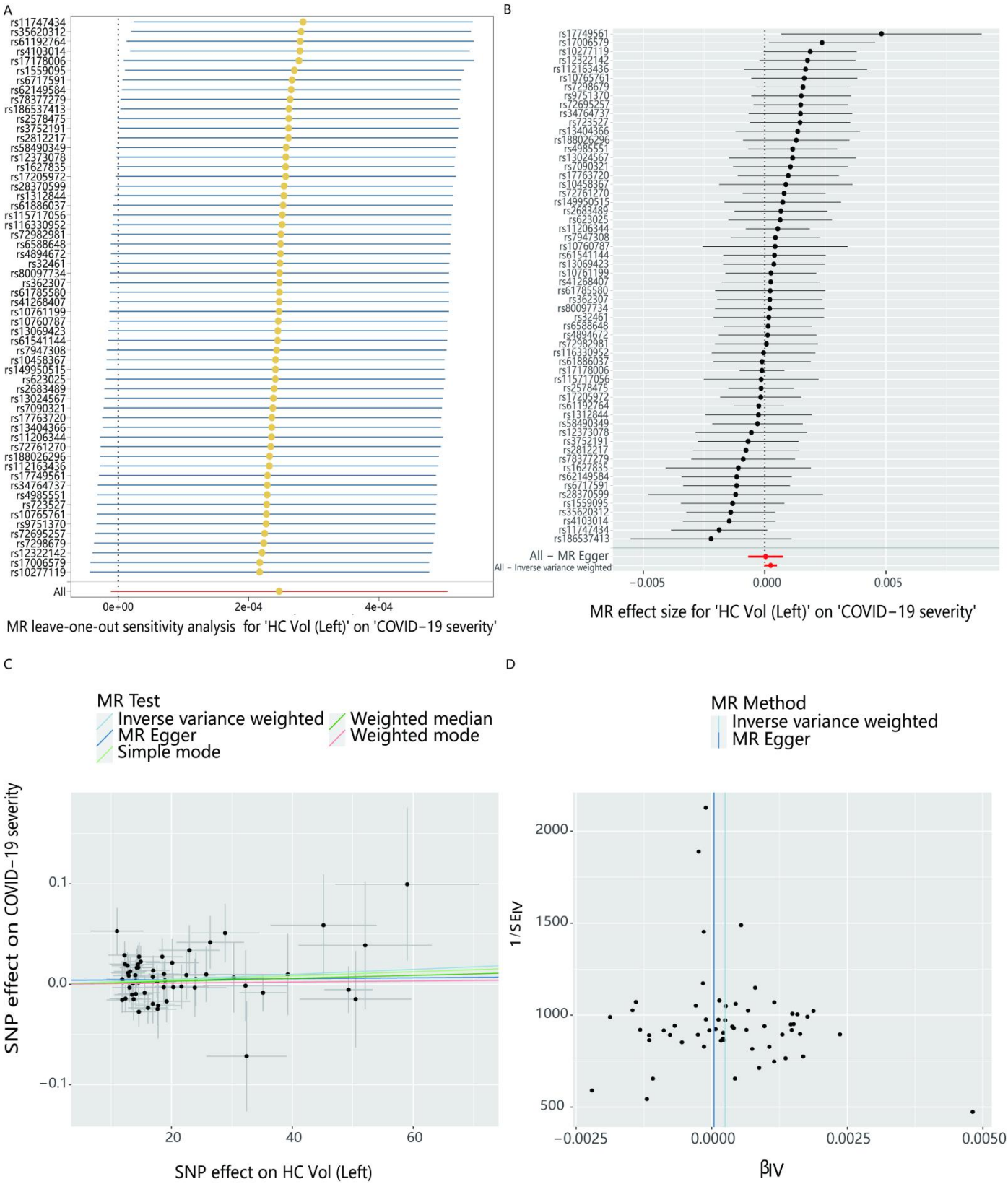


Fig. S66 The causal effect of Left hippocampal volume on COVID-19 severity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

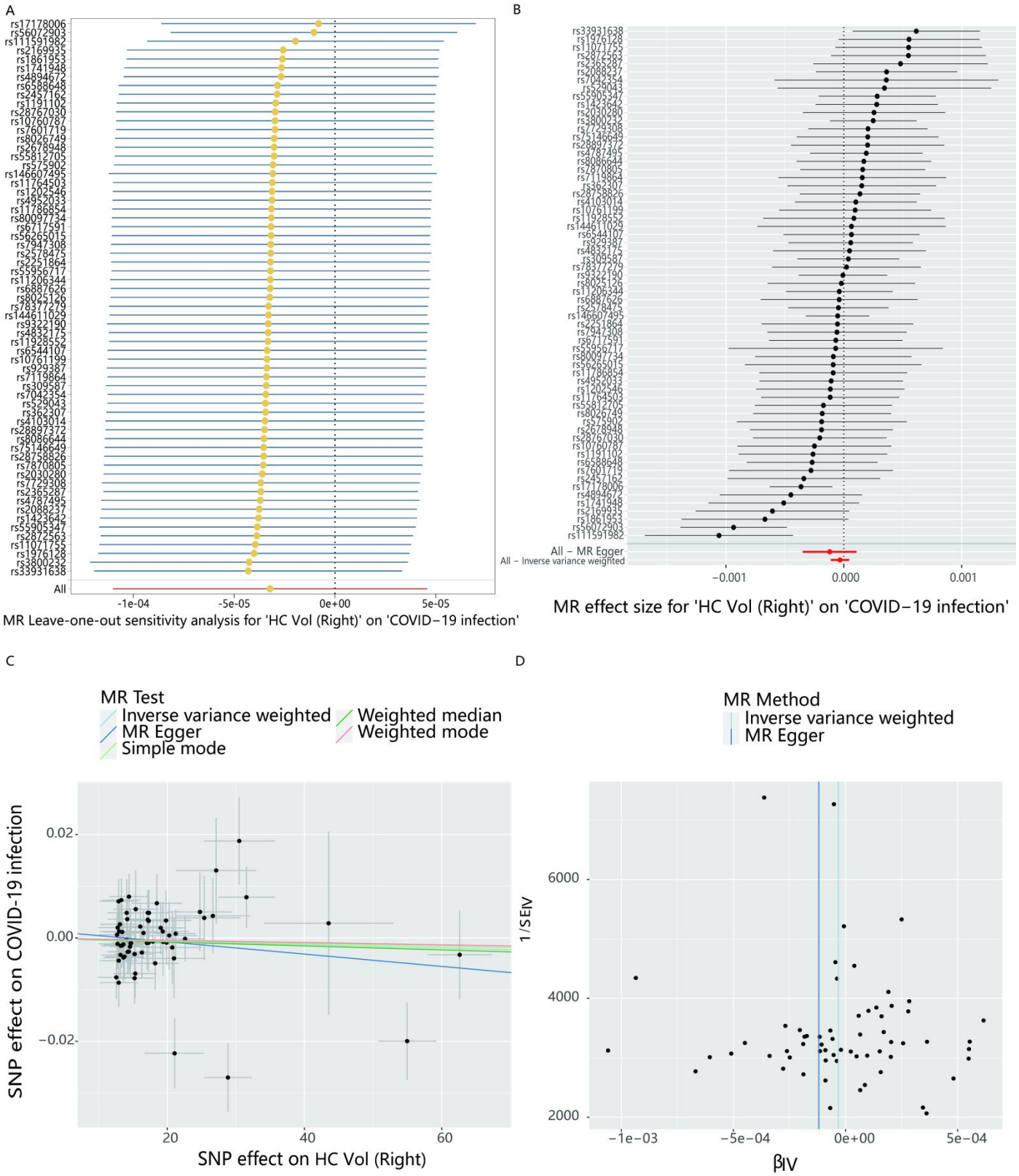


Fig. S67 The causal effect of Right hippocampal volume on COVID-19 infection. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

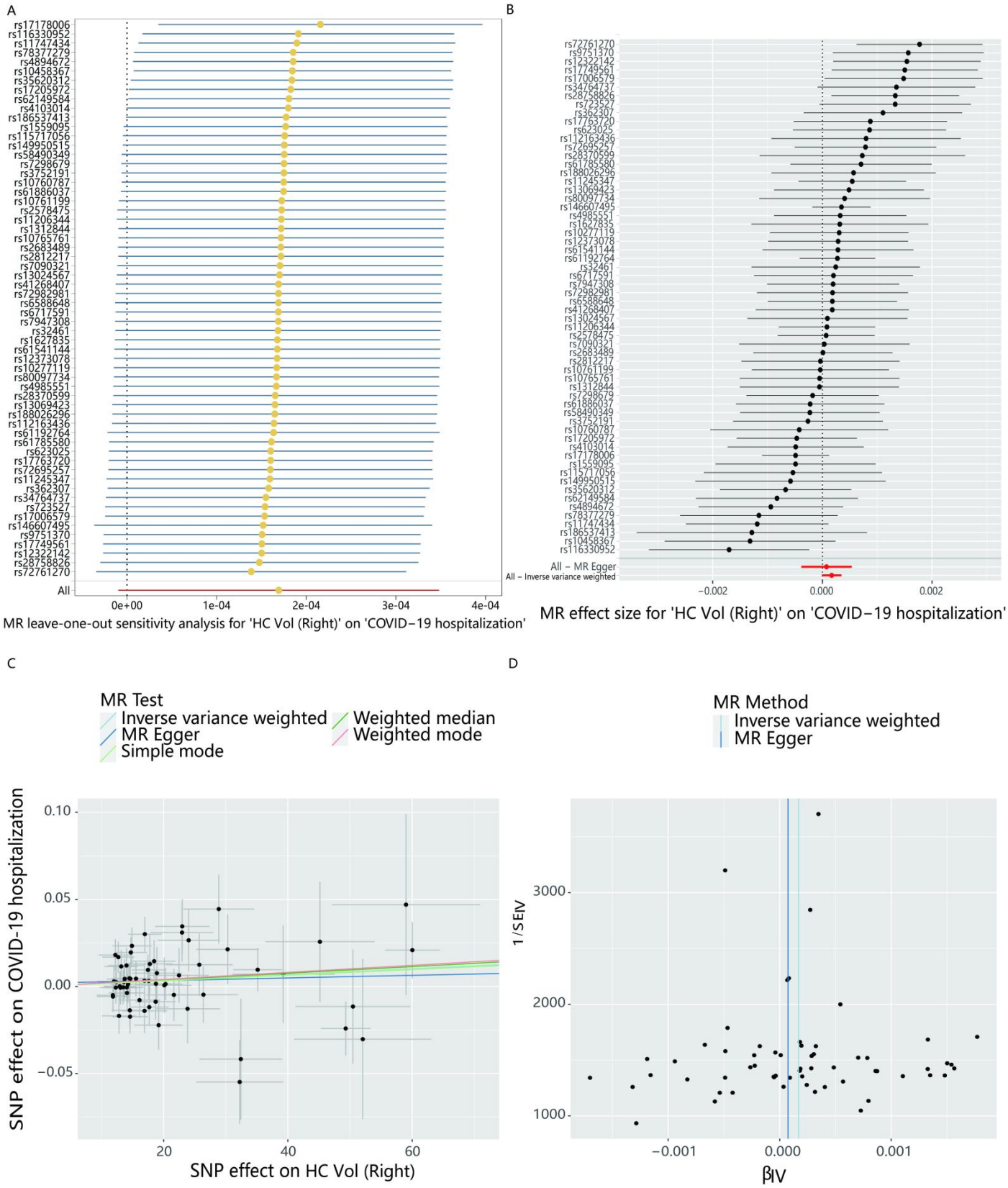


Fig. S68 The causal effect of Right hippocampal volume on COVID-19 hospitalization. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

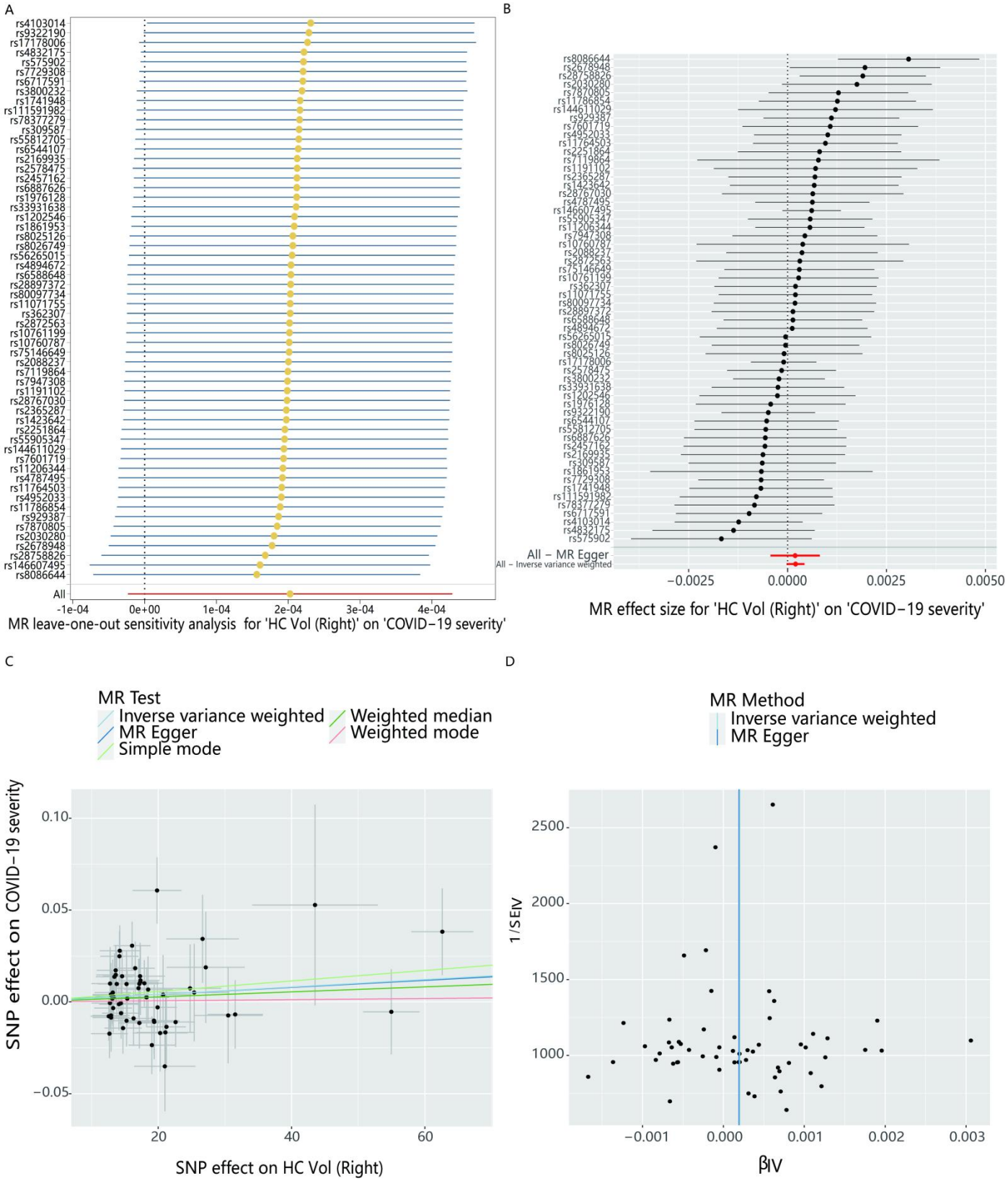


Fig. S69 The causal effect of Right hippocampal volume on COVID-19 severity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

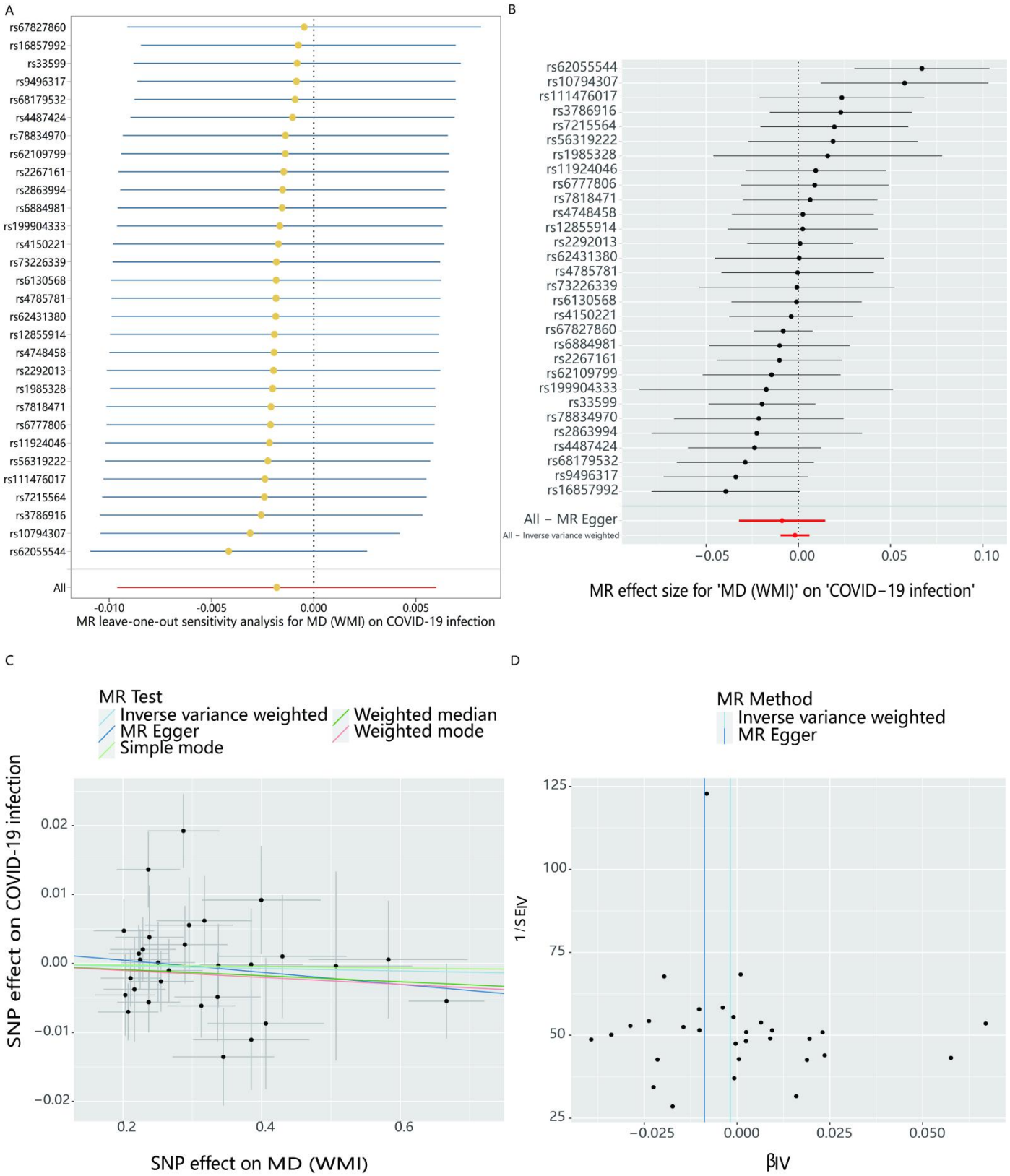


Fig. S70 The causal effect of mean diffusivity of White matter integrity on COVID-19 infection. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

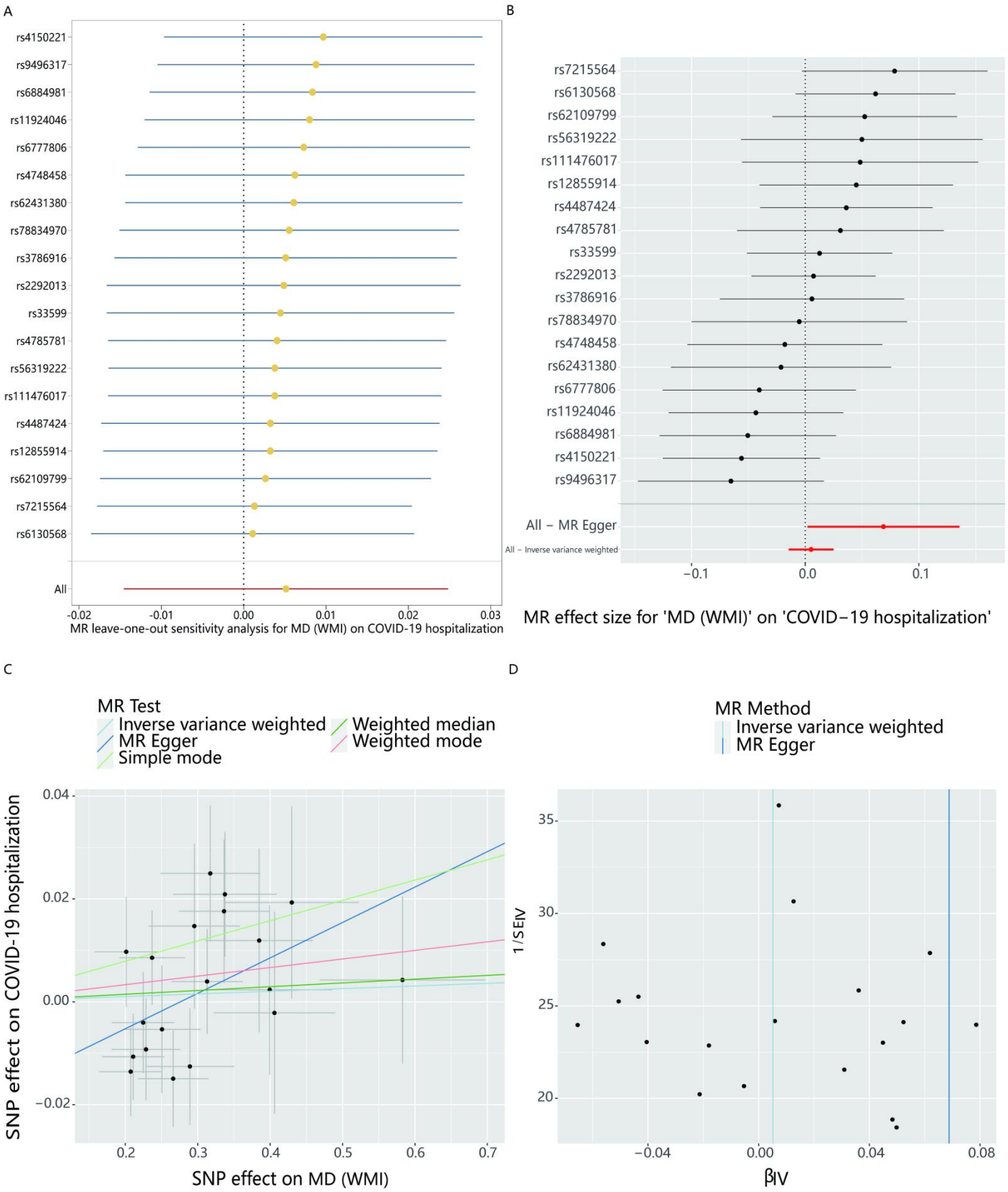


Fig. S71 The causal effect of mean diffusivity of White matter integrity on COVID-19 hospitalization. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

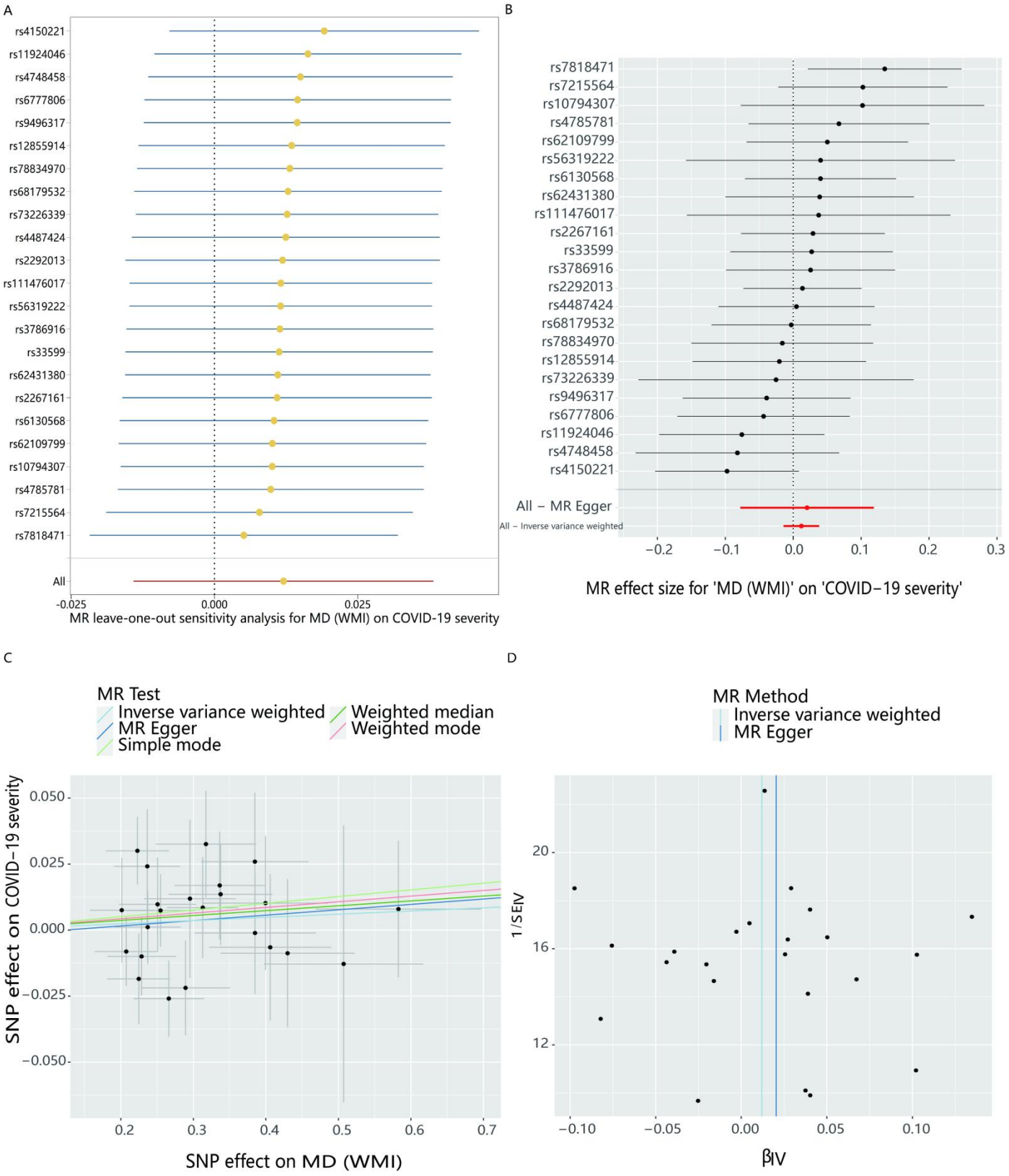


Fig. S72 The causal effect of mean diffusivity of White matter integrity on COVID-19 severity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

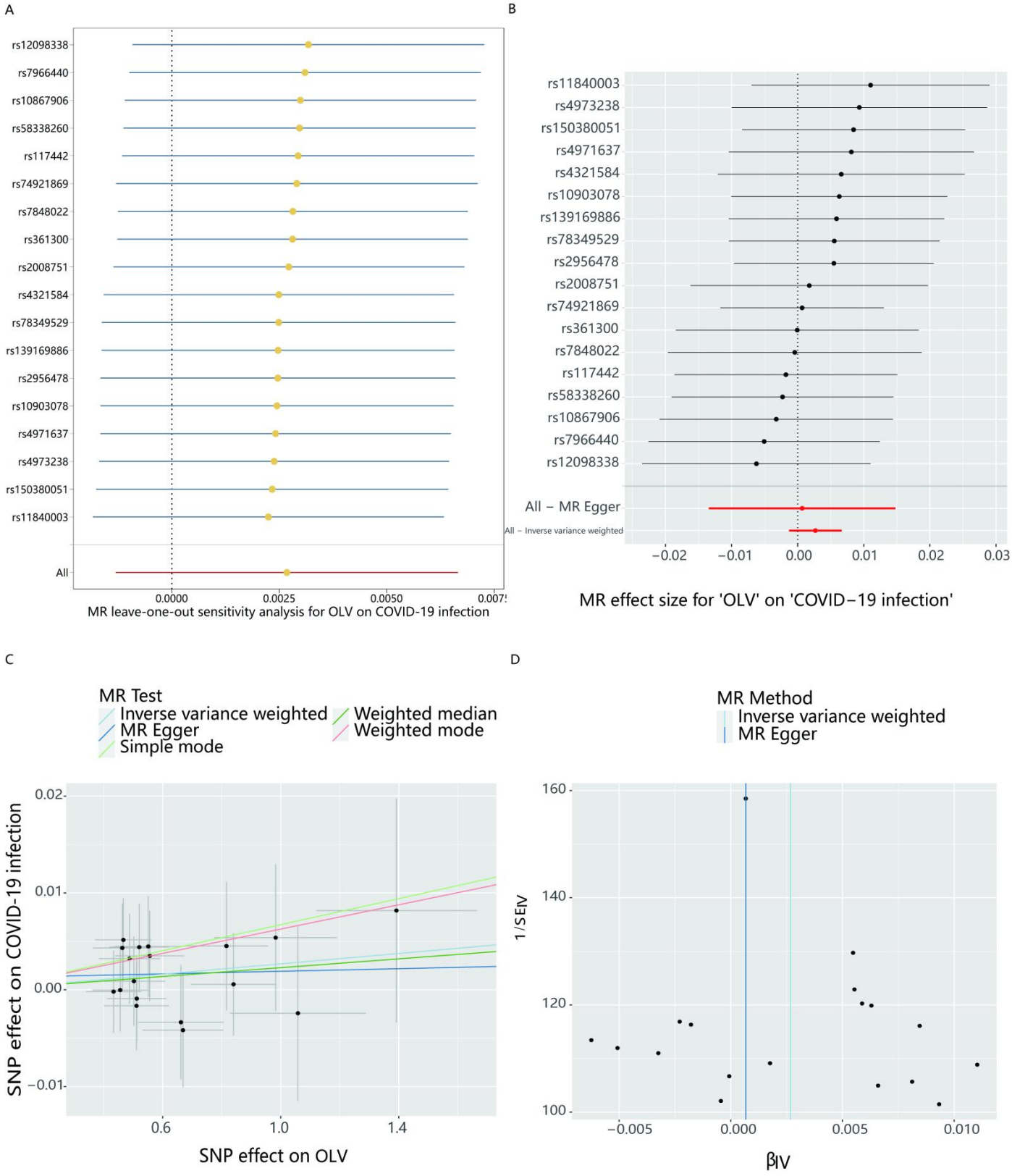


Fig. S73 The causal effect of Occipital lobe volume measurement on COVID-19 infection. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

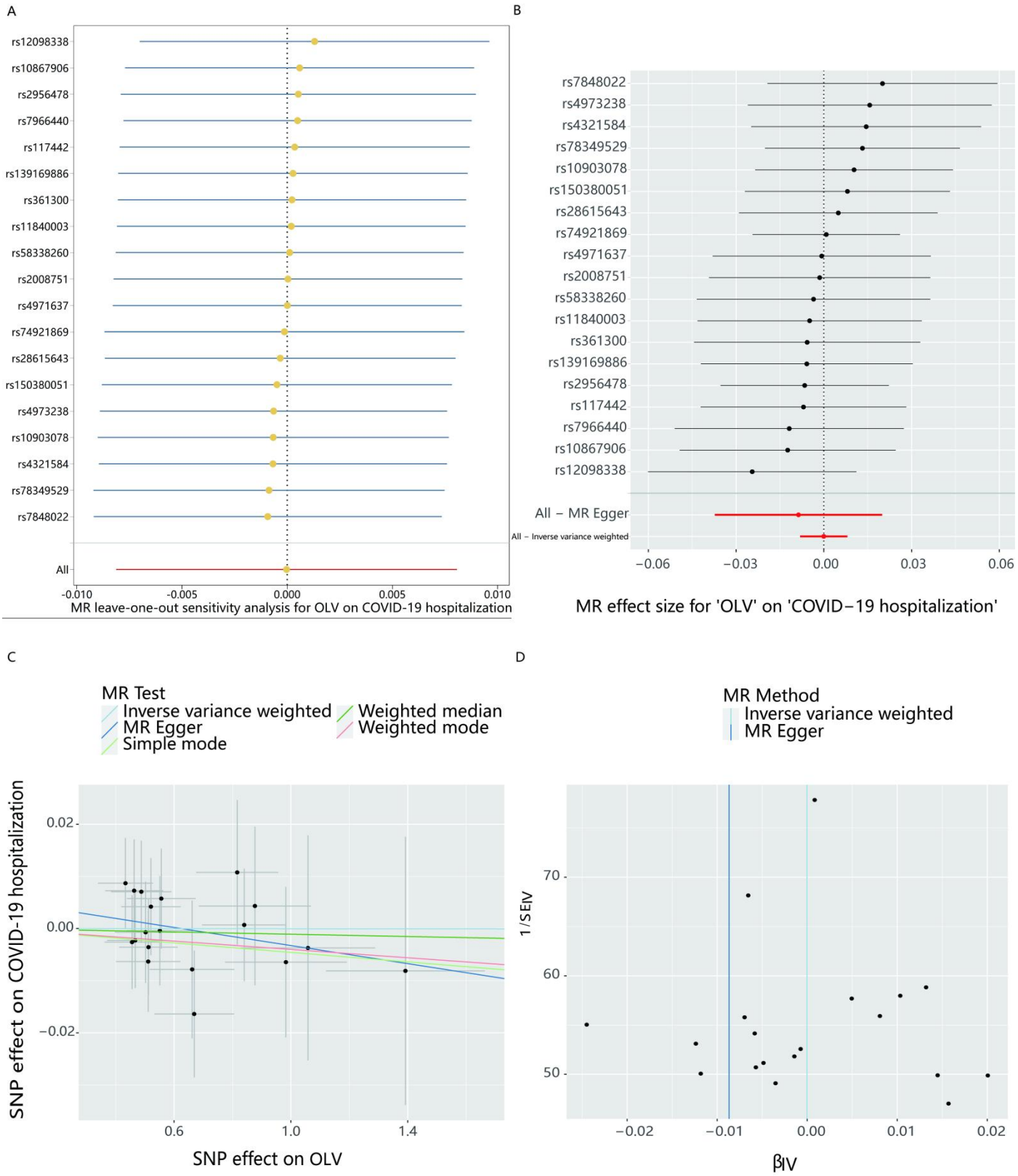


Fig. S74 The causal effect of Occipital lobe volume measurement on COVID-19 hospitalization. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

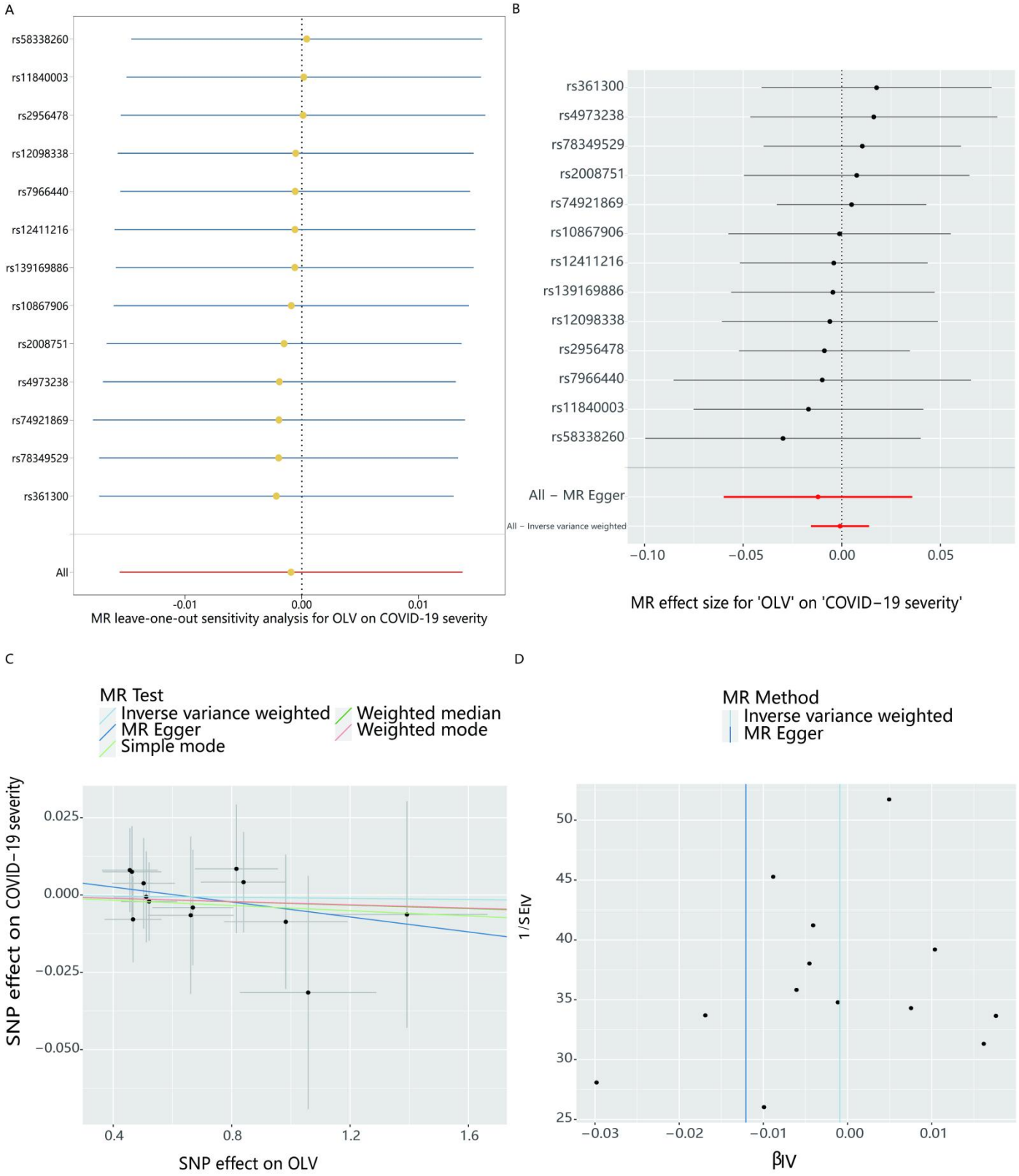


Fig. S75 The causal effect of Occipital lobe volume measurement on COVID-19 severity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

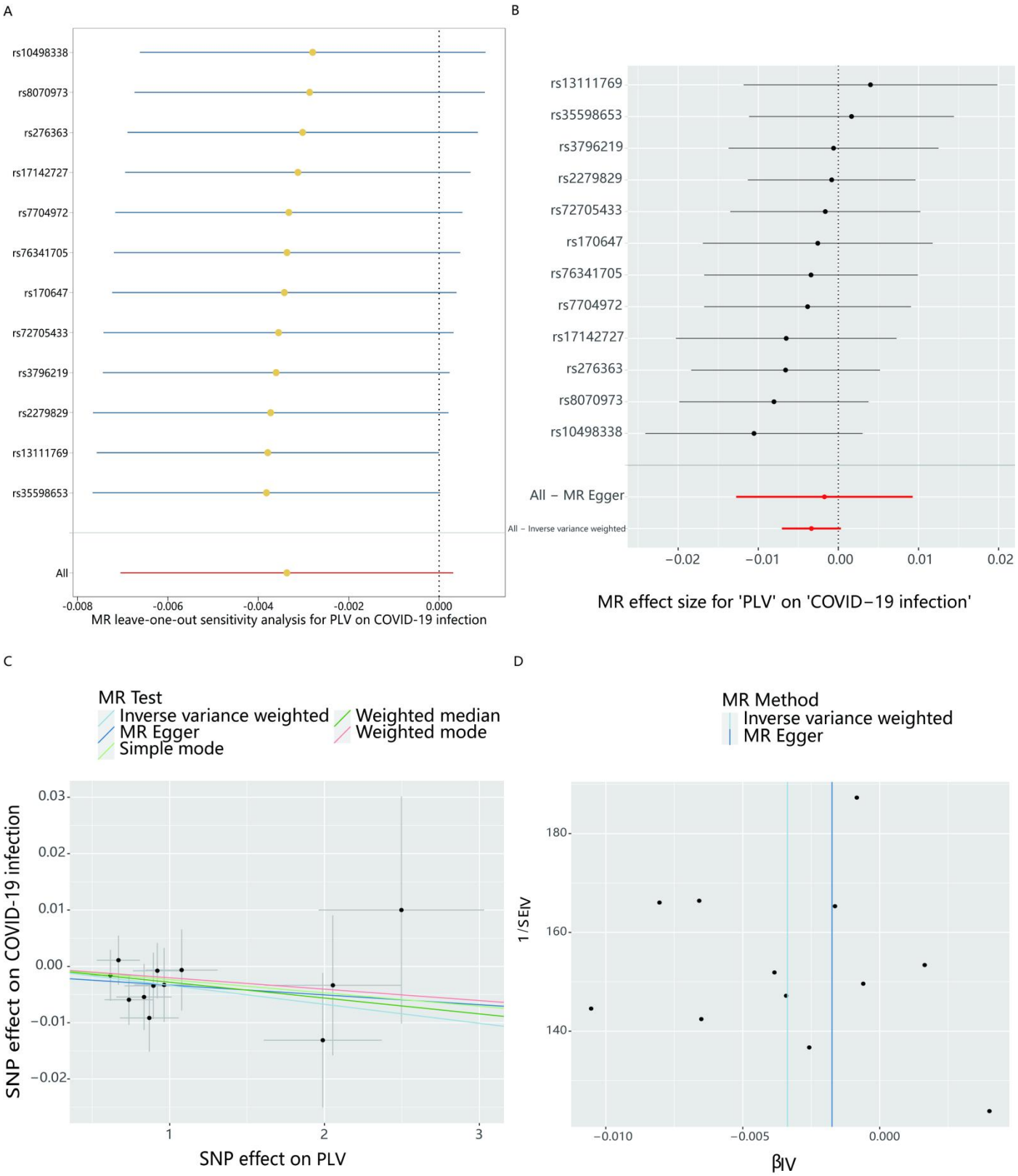


Fig. S76 The causal effect of Parietal lobe volume measurement on COVID-19 infection. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

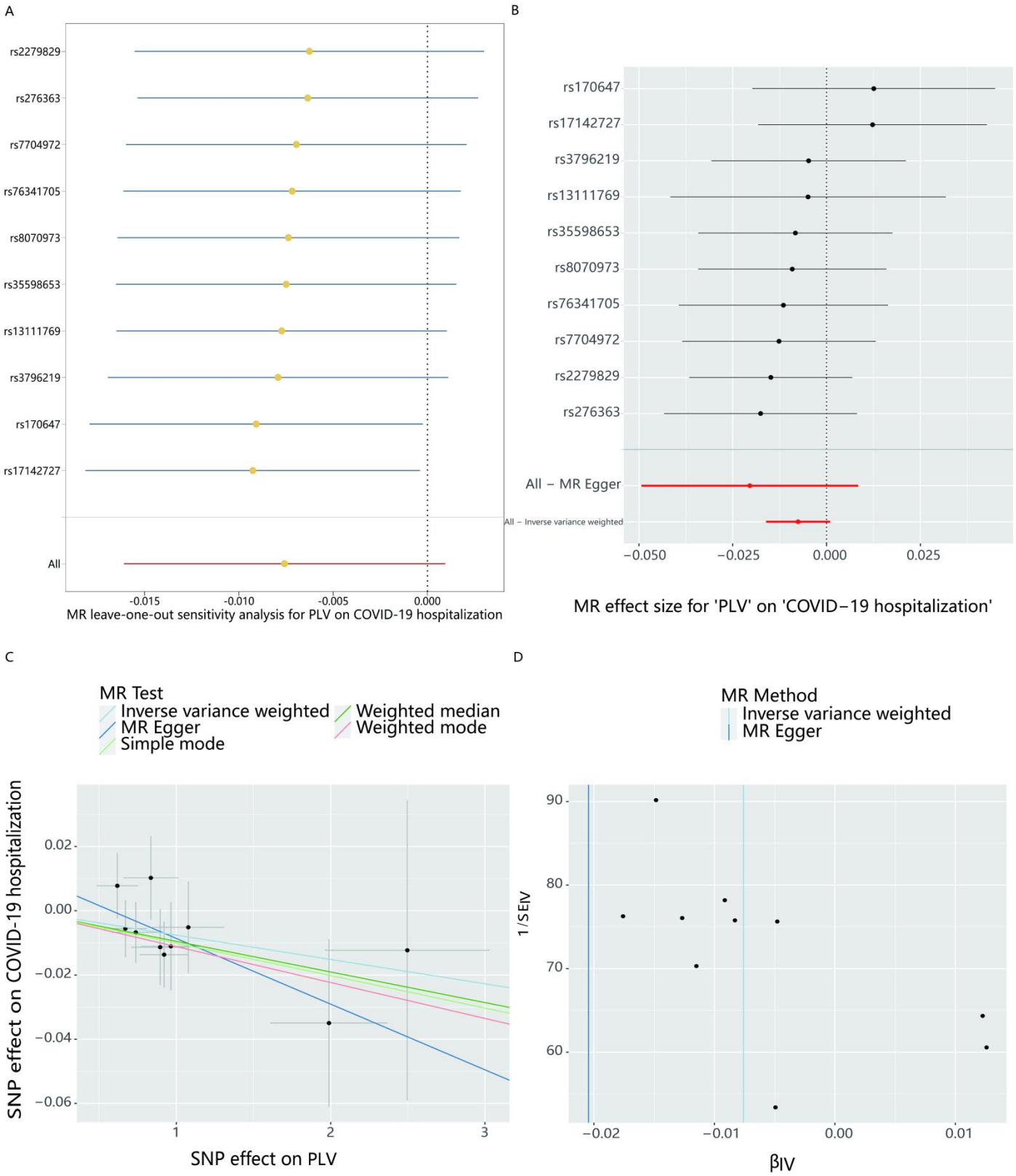


Fig. S77 The causal effect of Parietal lobe volume measurement on COVID-19 hospitalization. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

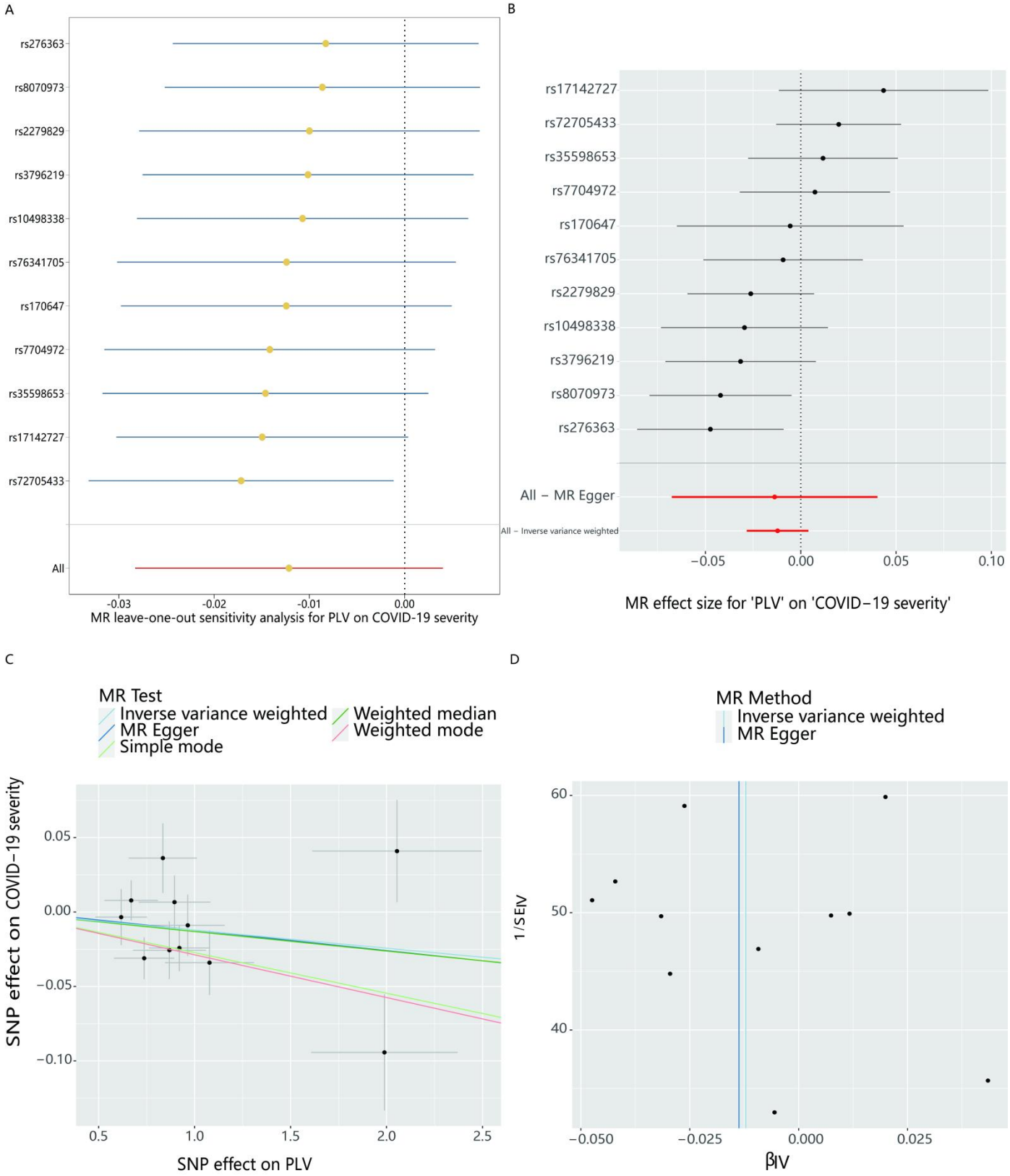


Fig. S78 The causal effect of Parietal lobe volume measurement on COVID-19 severity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

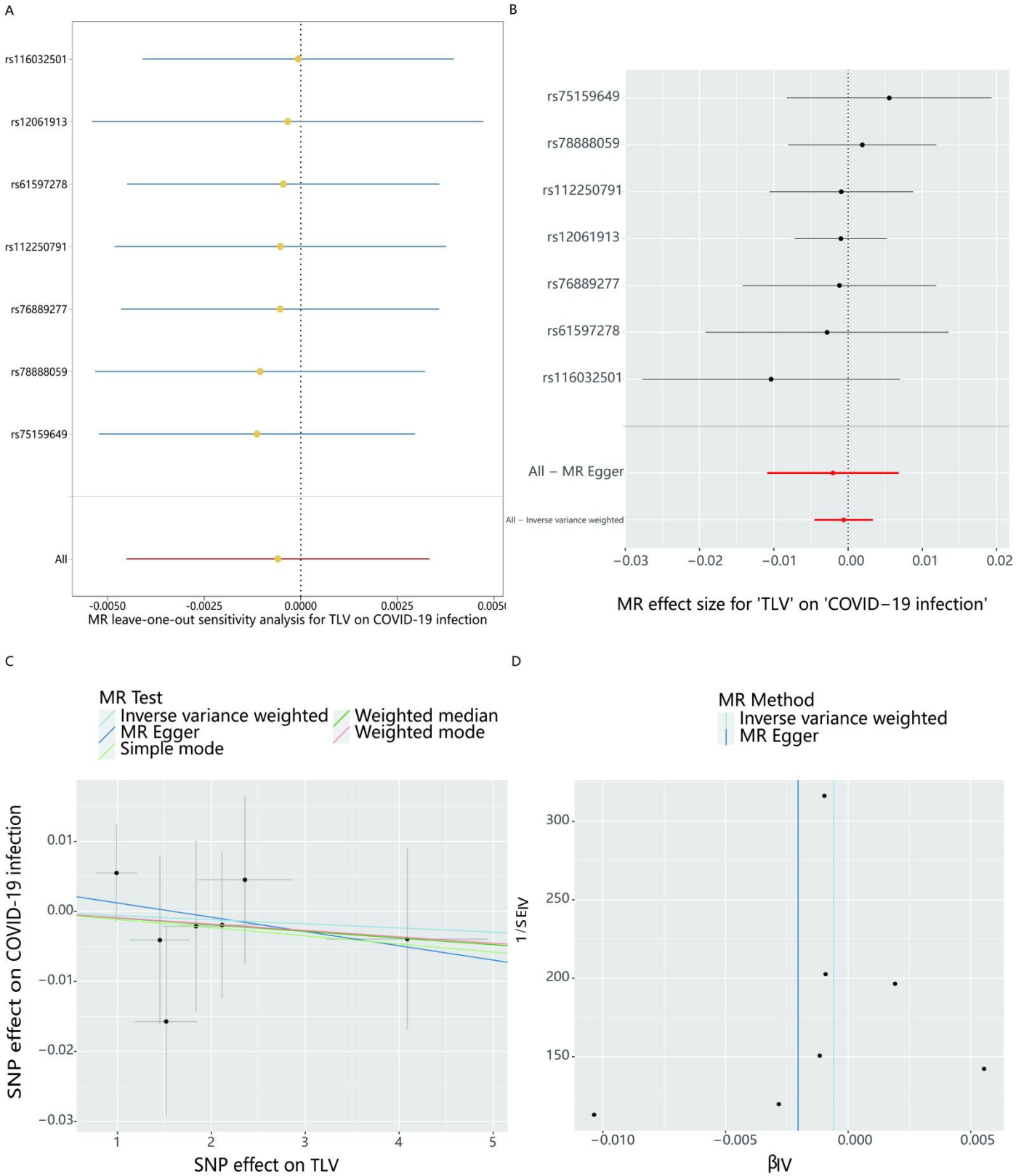


Fig. S79 The causal effect of Temporal lobe volume measurement on COVID-19 infection. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

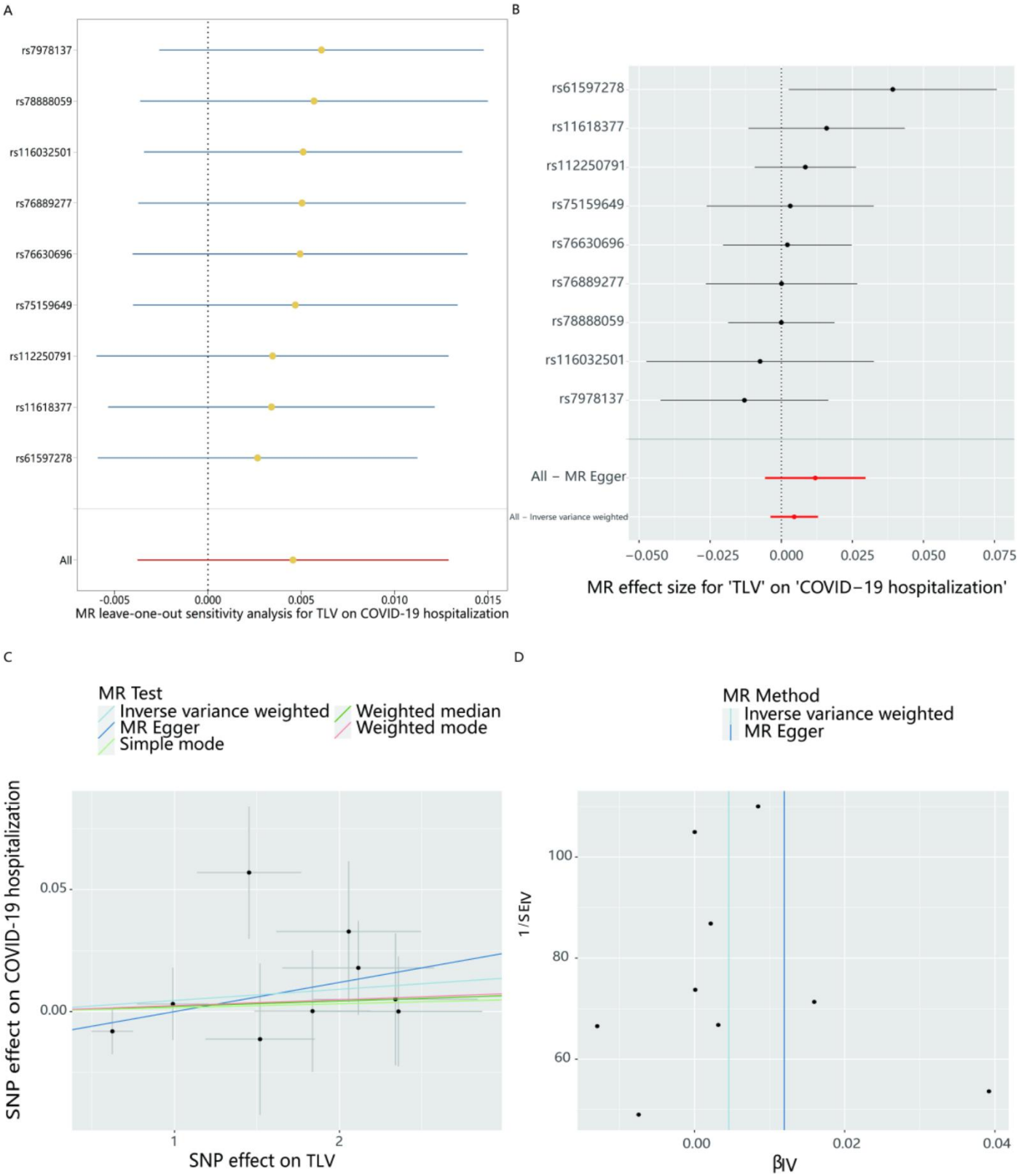


Fig. S80 The causal effect of Temporal lobe volume measurement on COVID-19 hospitalization. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

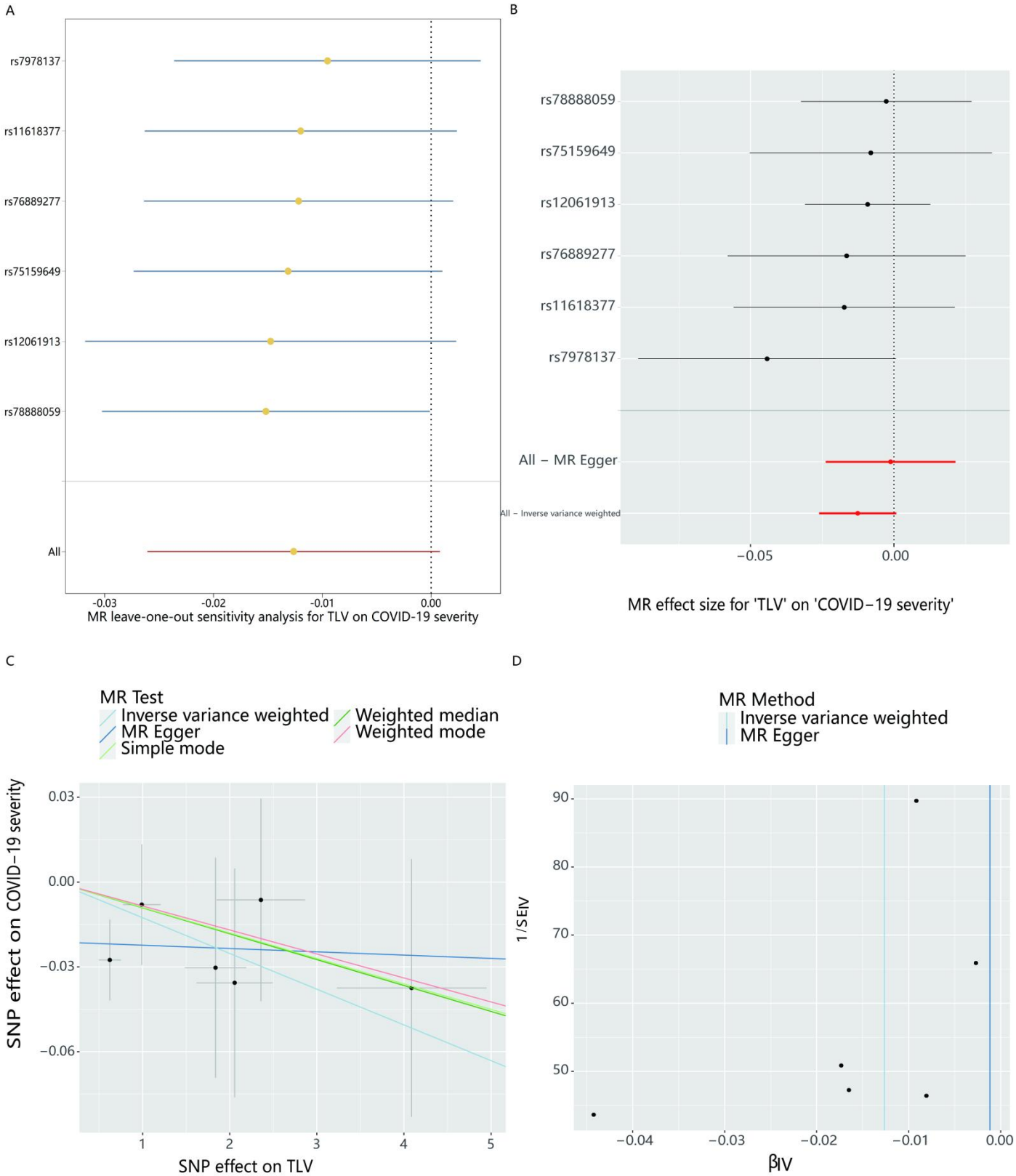


Fig. S81 The causal effect of Temporal lobe volume measurement on COVID-19 severity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

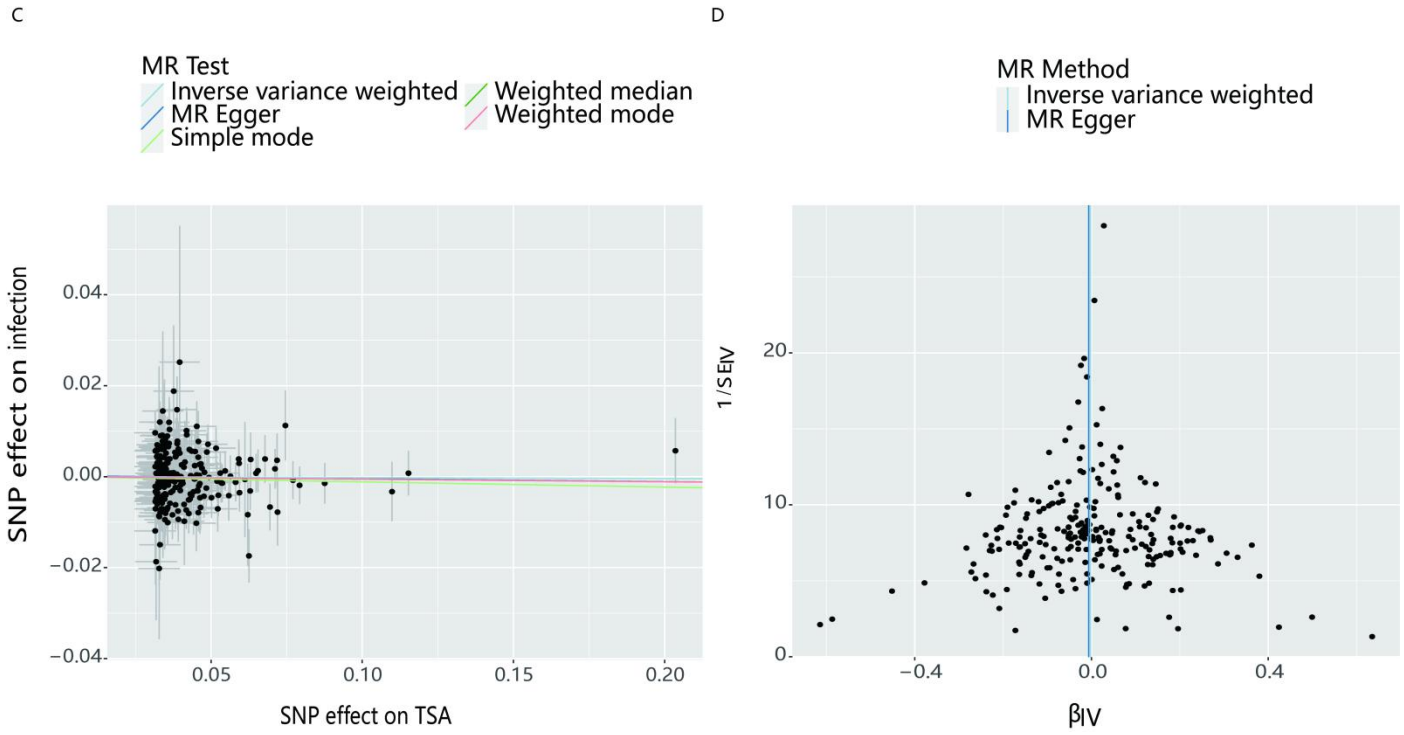
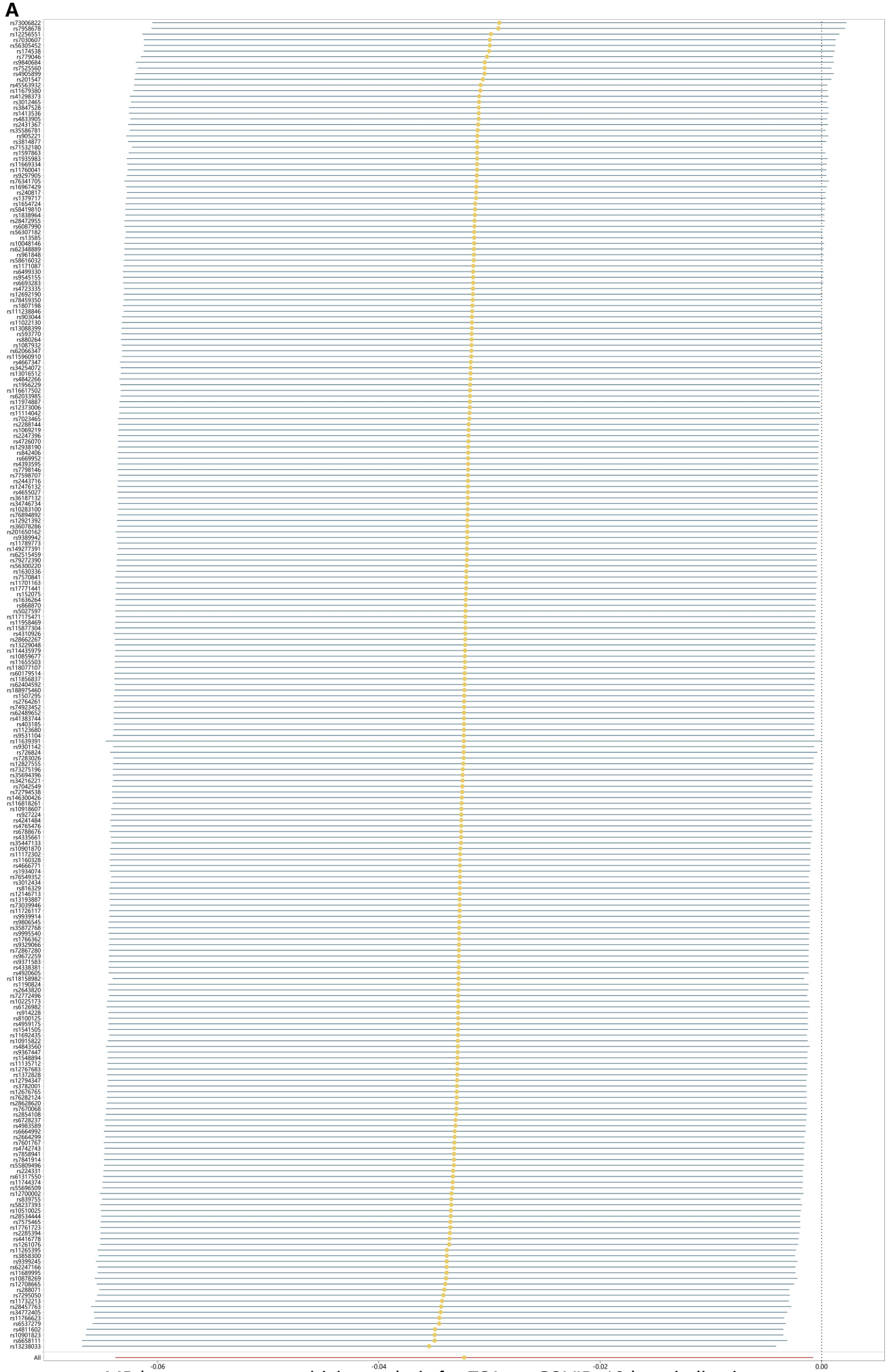


Fig. S82 The causal effect of Total surface area measurement on COVID-19 infection. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.



MR leave-one-out sensitivity analysis for TSA on COVID-19 hospitalization

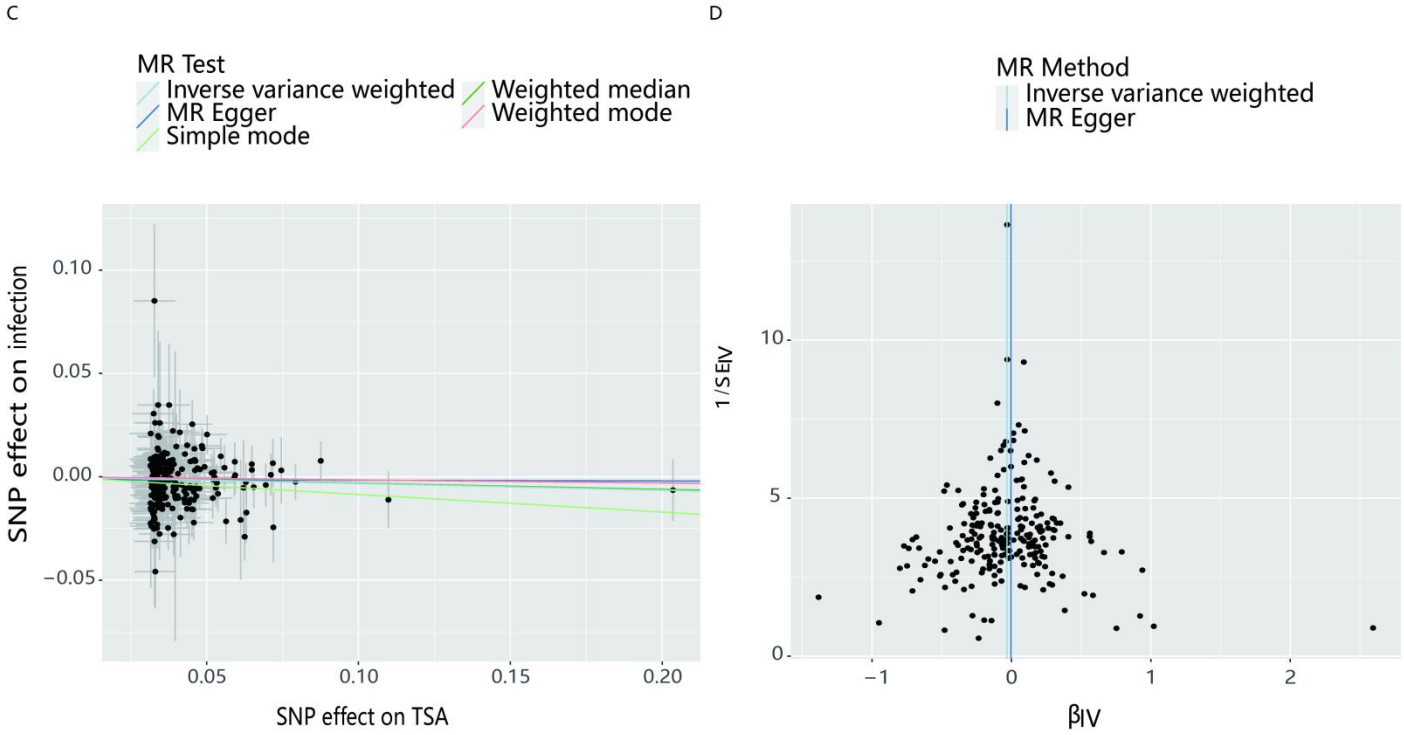
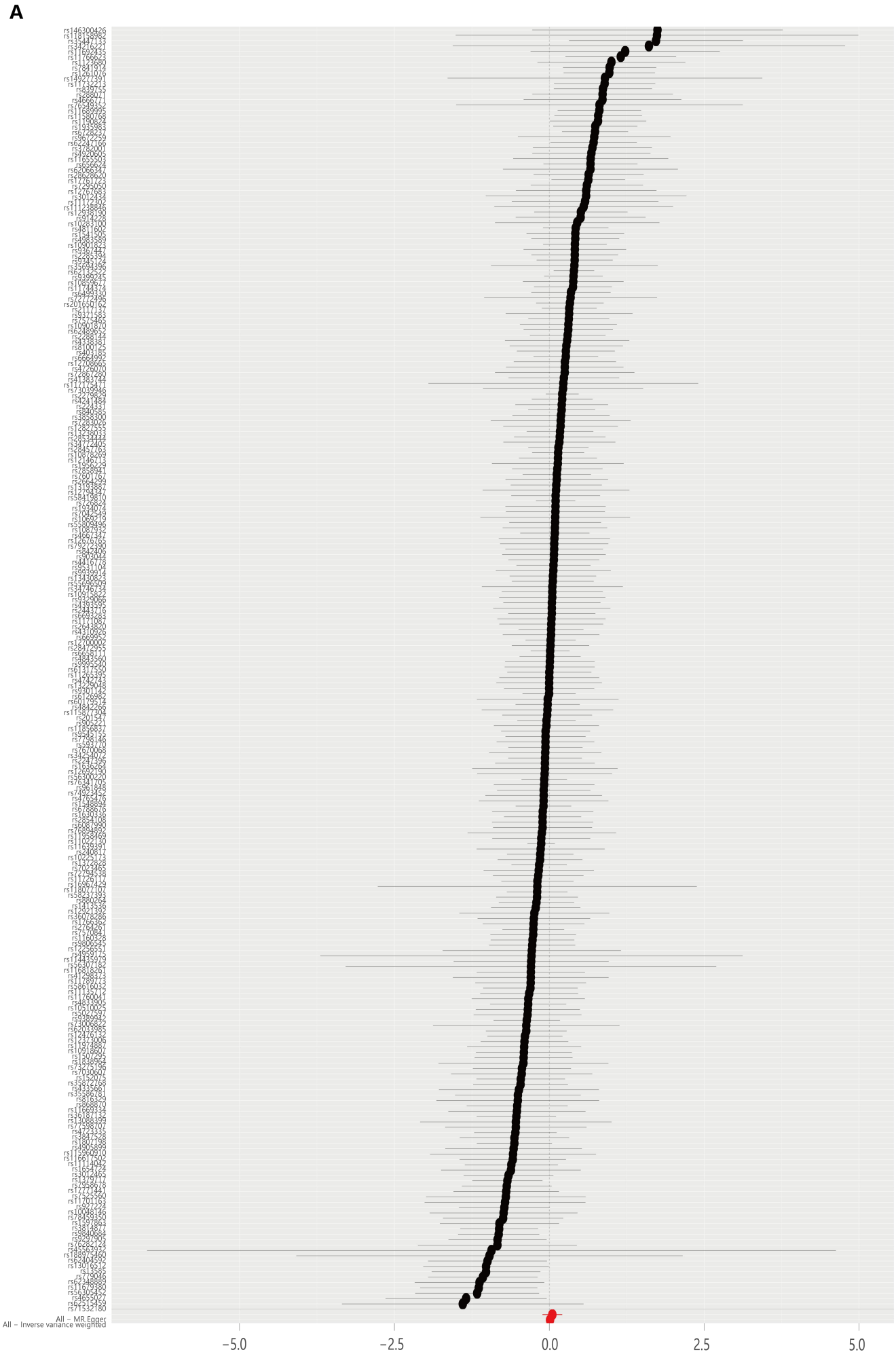


Fig. S83 The causal effect of Total surface area measurement on COVID-19 hospitalization. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.


A
All – MR Egger
All – Inverse variance weighted
−5.0
−2.5
0.0
2.5
5.0
MR effect size for 'TSA' on 'COVID-19 severity'

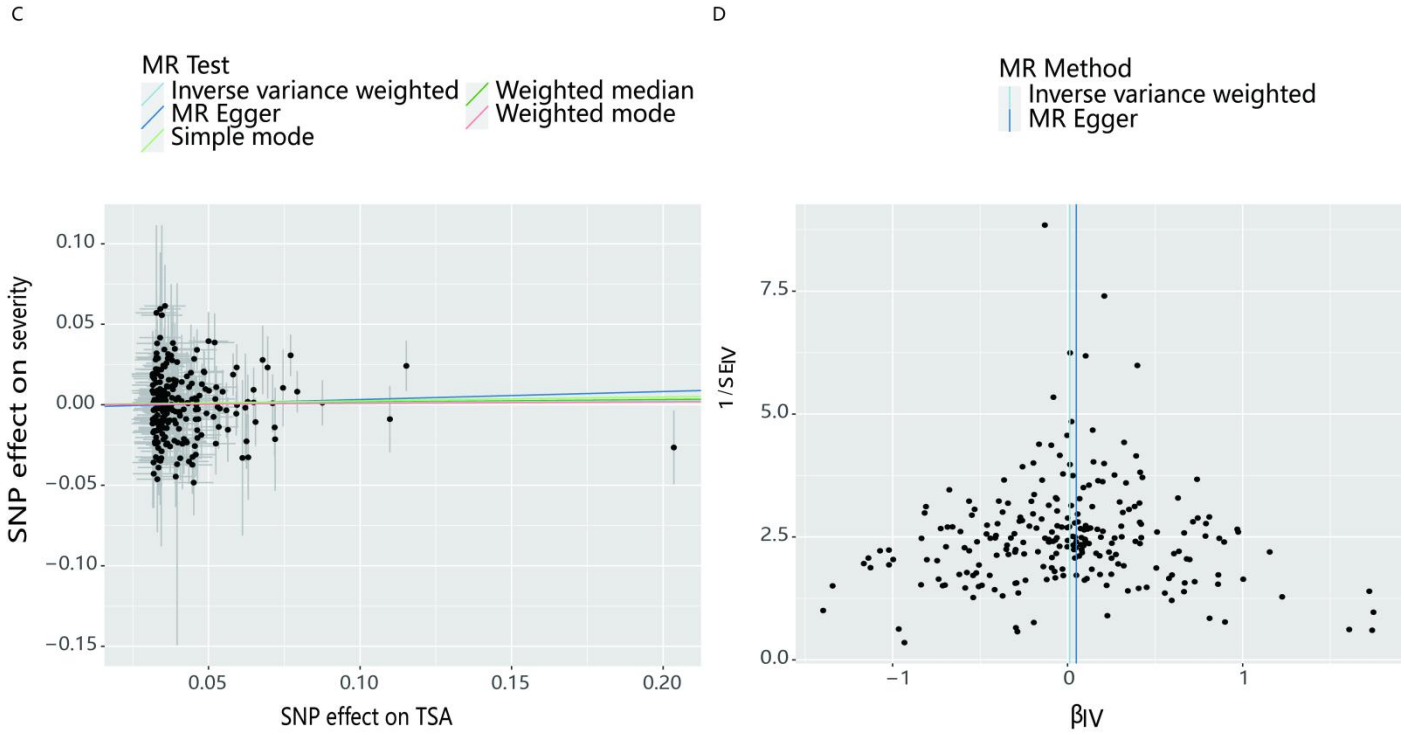


Fig. S84 The causal effect of Total surface area measurement on COVID-19 Severiity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

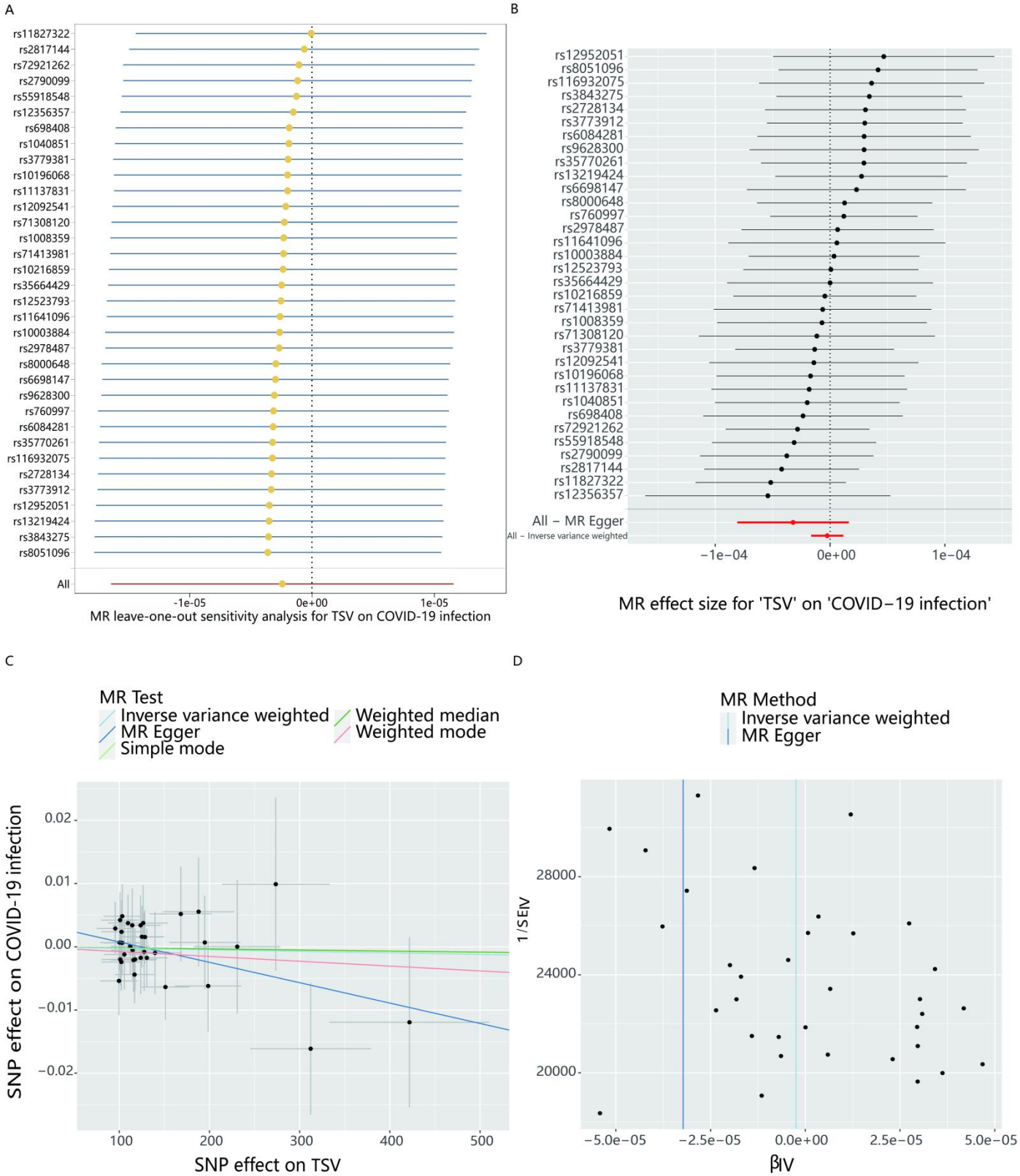


Fig. S87 The causal effect of Total subcortical volume on COVID-19 infection. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

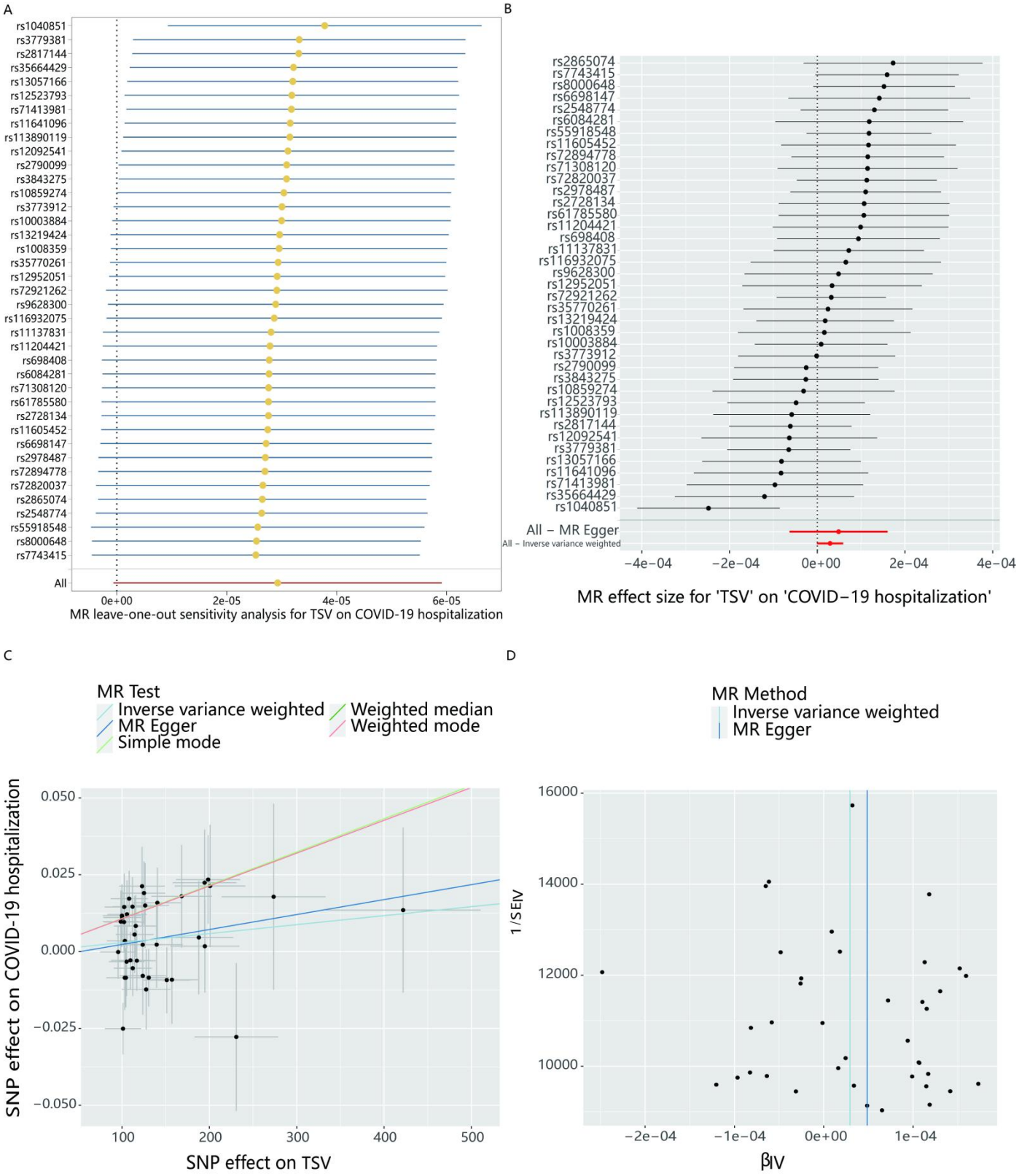


Fig. S86 The causal effect of Total subcortical volume on COVID-19 hospitalization. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

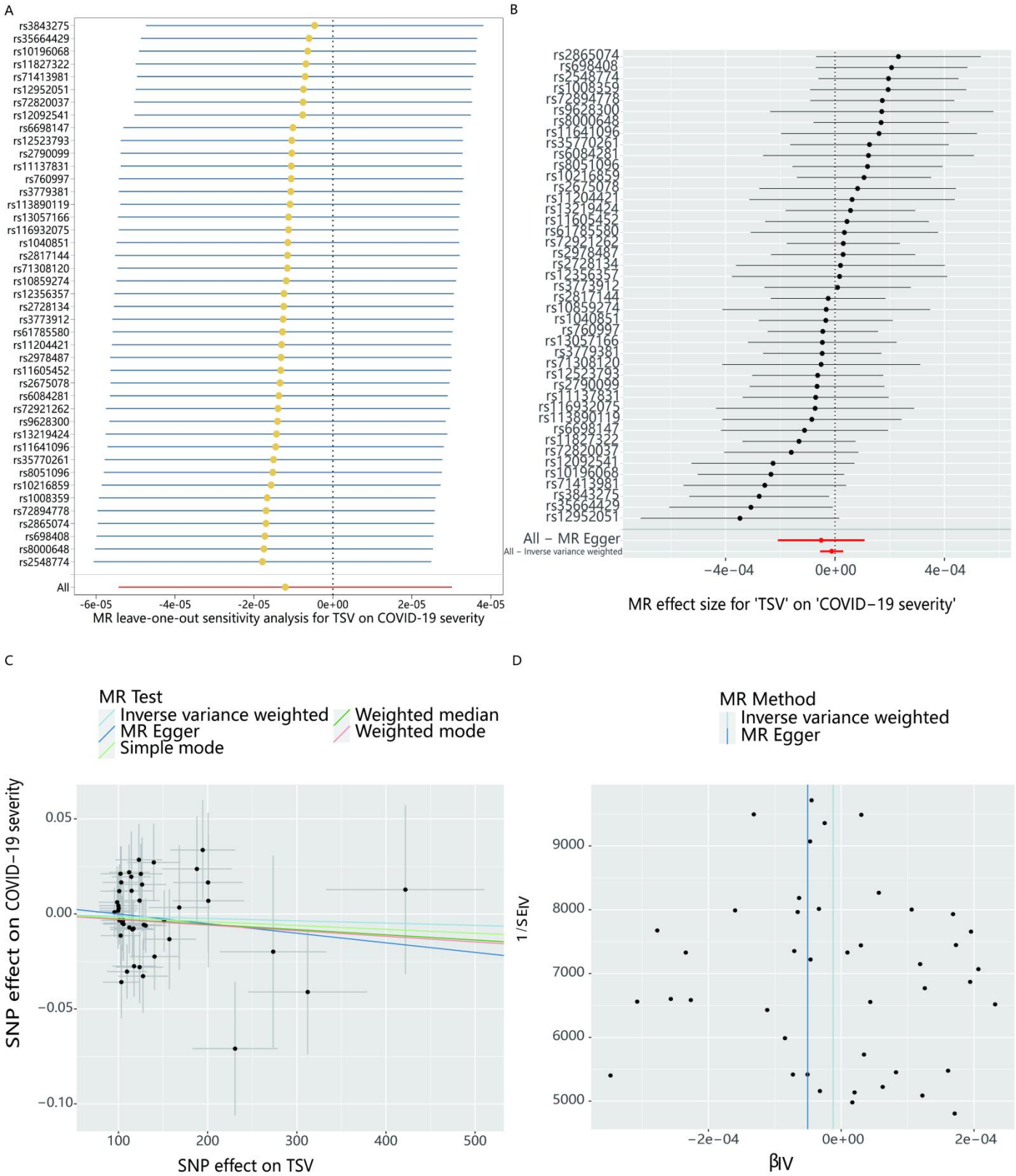


Fig. S87 The causal effect of Total subcortical volume on COVID-19 severity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

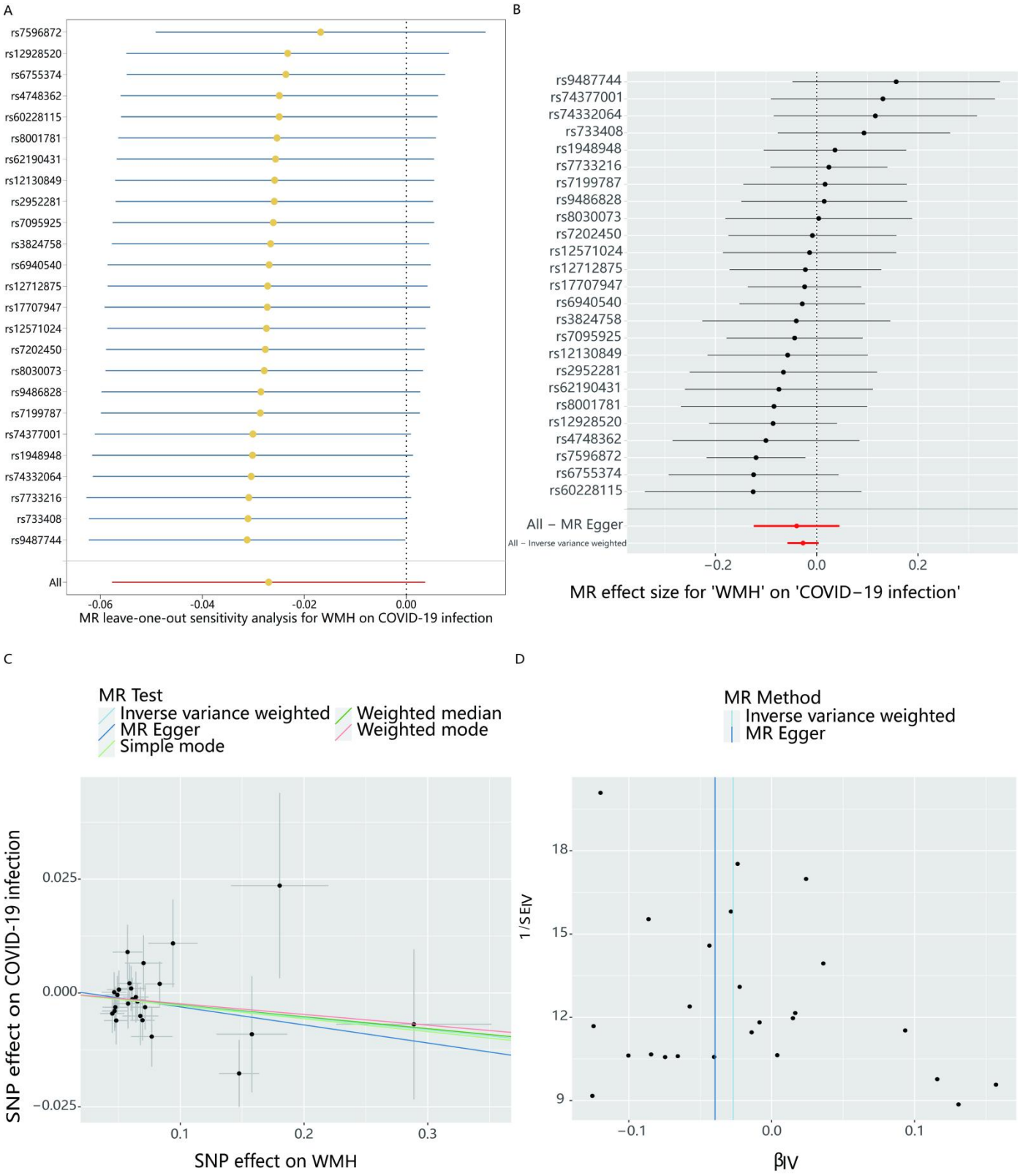


Fig. S88 The causal effect of White matter hyperintensity measurement on COVID-19 infection. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

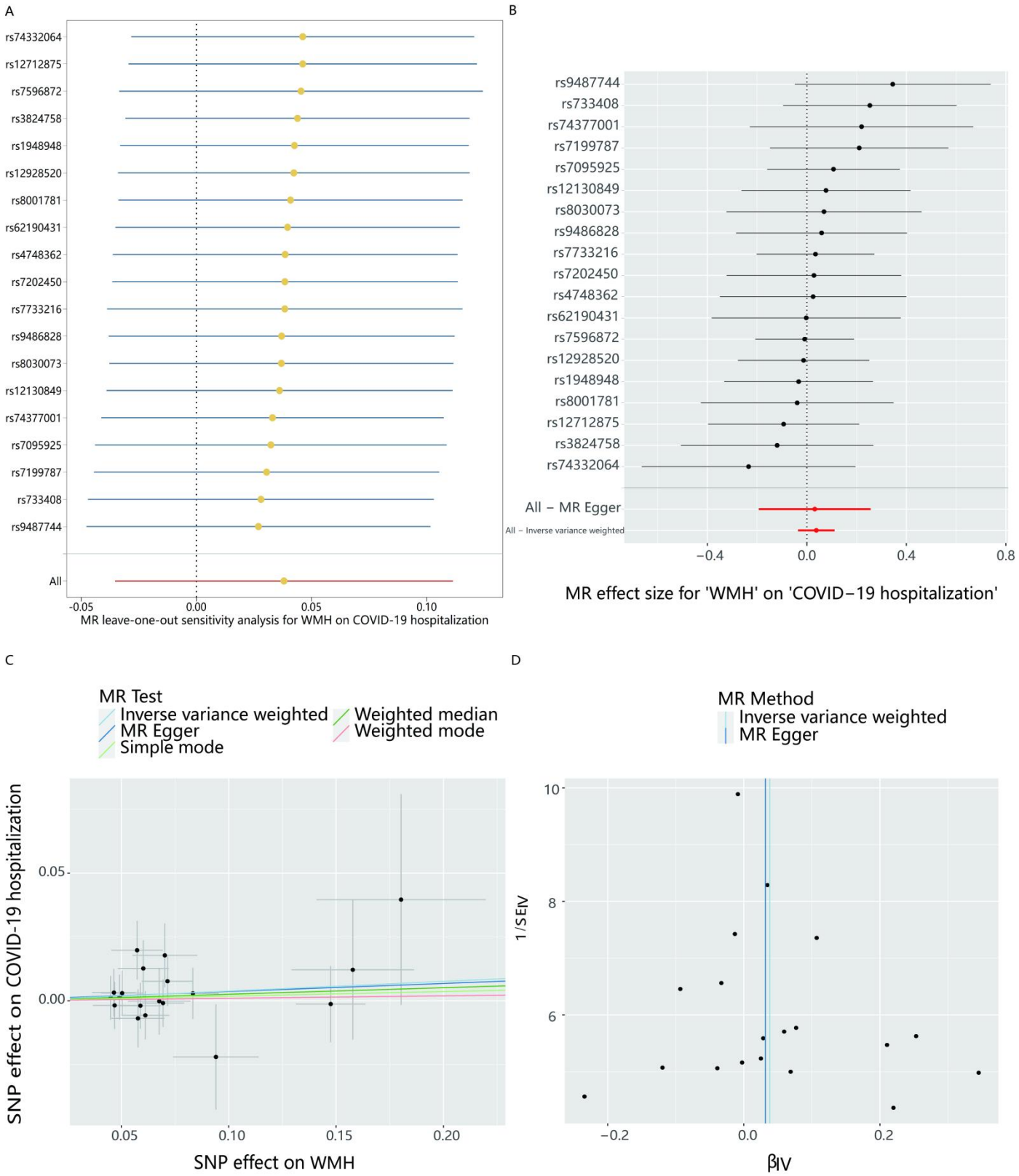


Fig. S89 The causal effect of White matter hyperintensity measurement on COVID-19 hospitalization. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

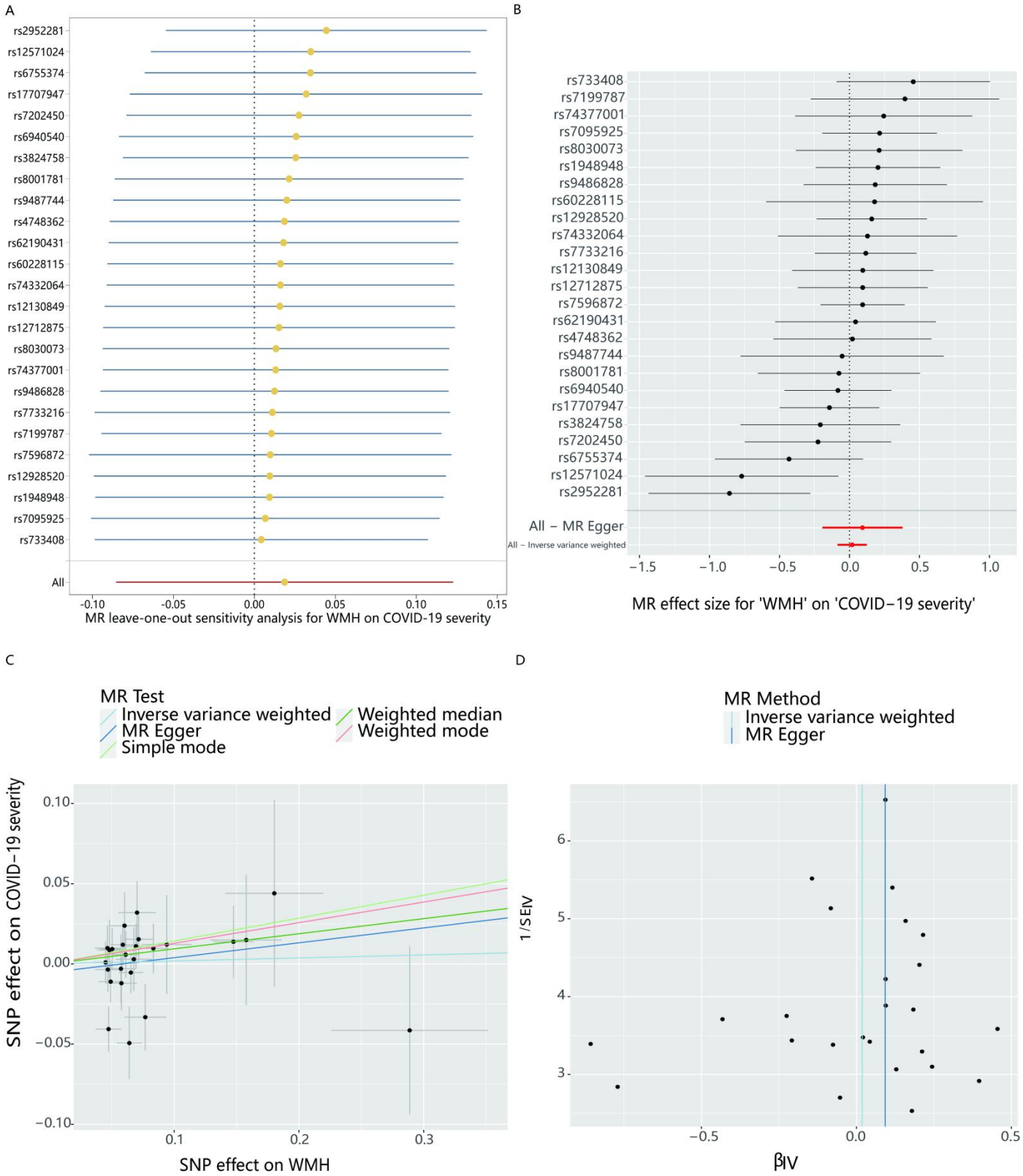


Fig. S90 The causal effect of White matter hyperintensity measurement on COVID-19 severity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

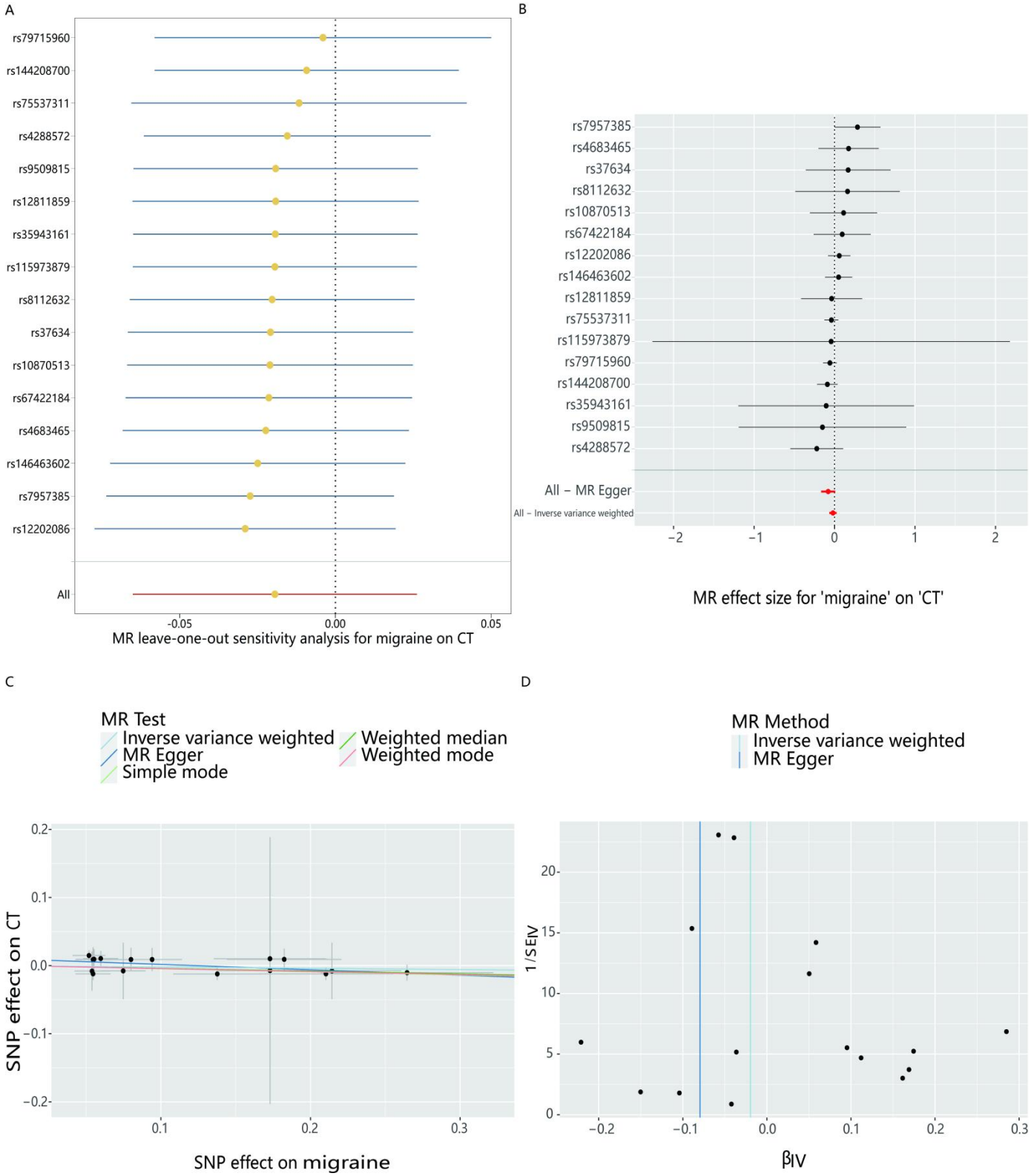


Fig. S91 The causal effect of migraine on Cortical Thickness. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

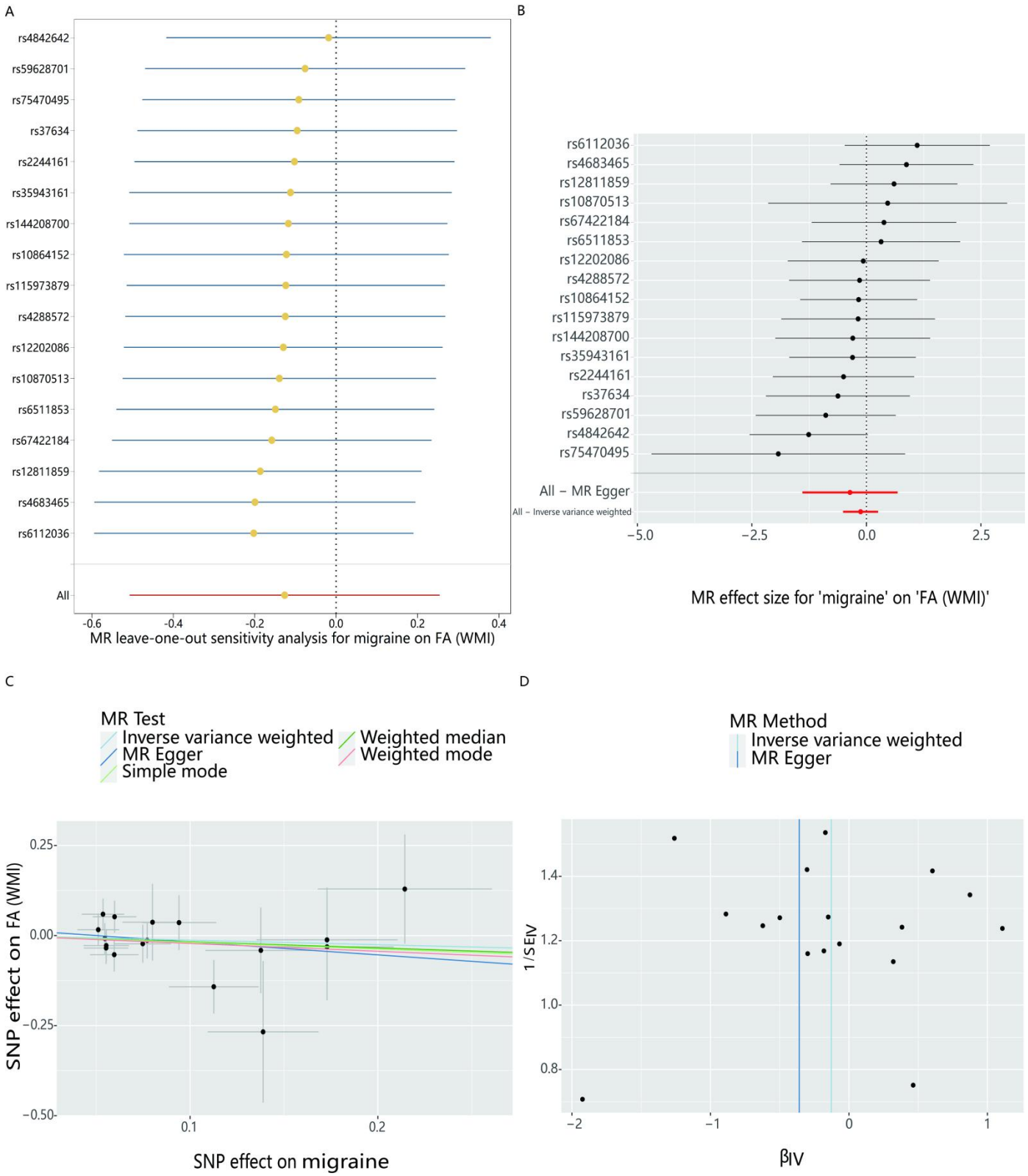


Fig. S92 The causal effect of migraine on fractional anisotropy of White matter integrity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

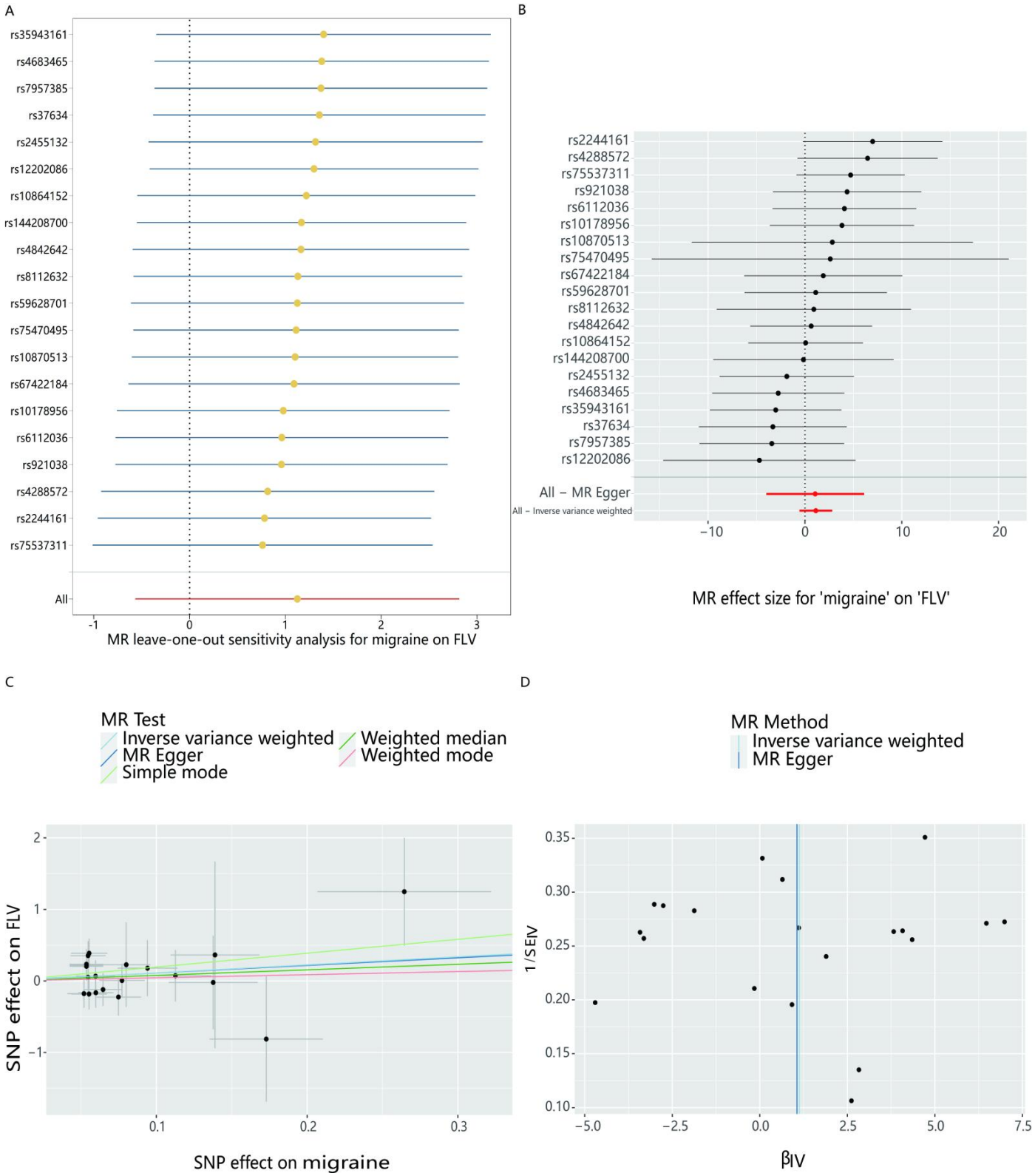


Fig. S93 The causal effect of migraine on Frontal lobe volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

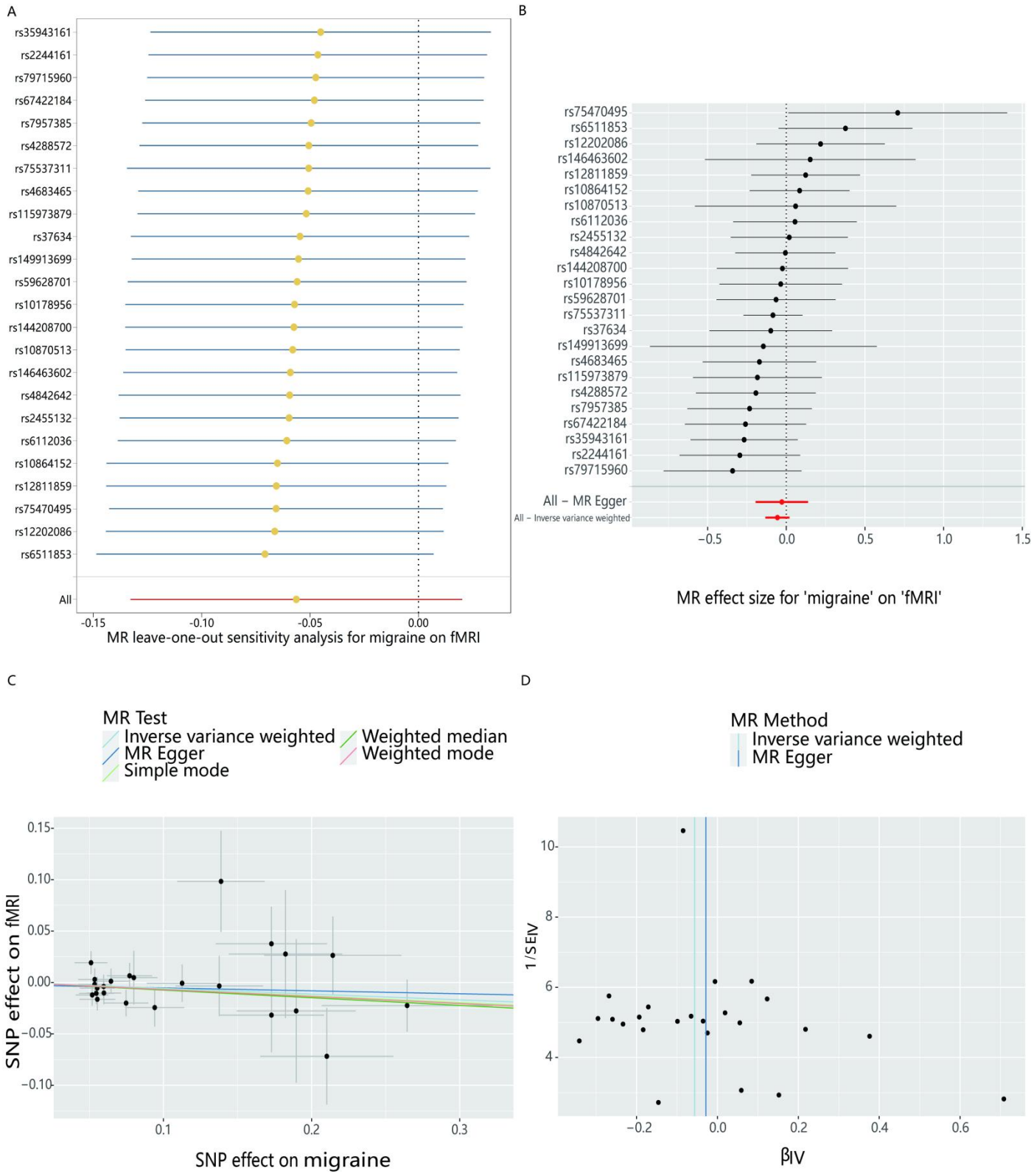


Fig. S94 The causal effect of migraine on Functional brain measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

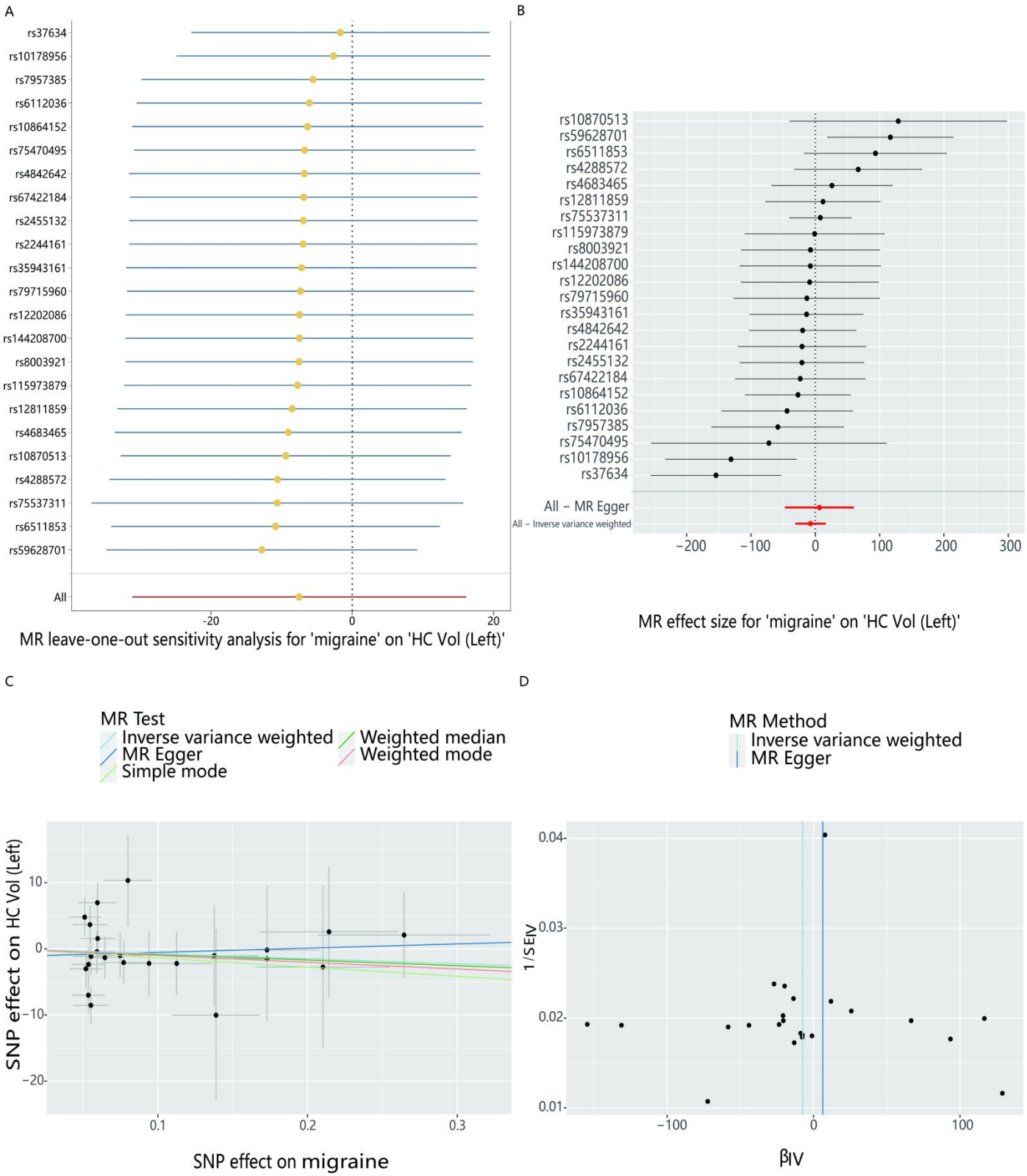


Fig. S95 The causal effect of migraine on Left hippocampal volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

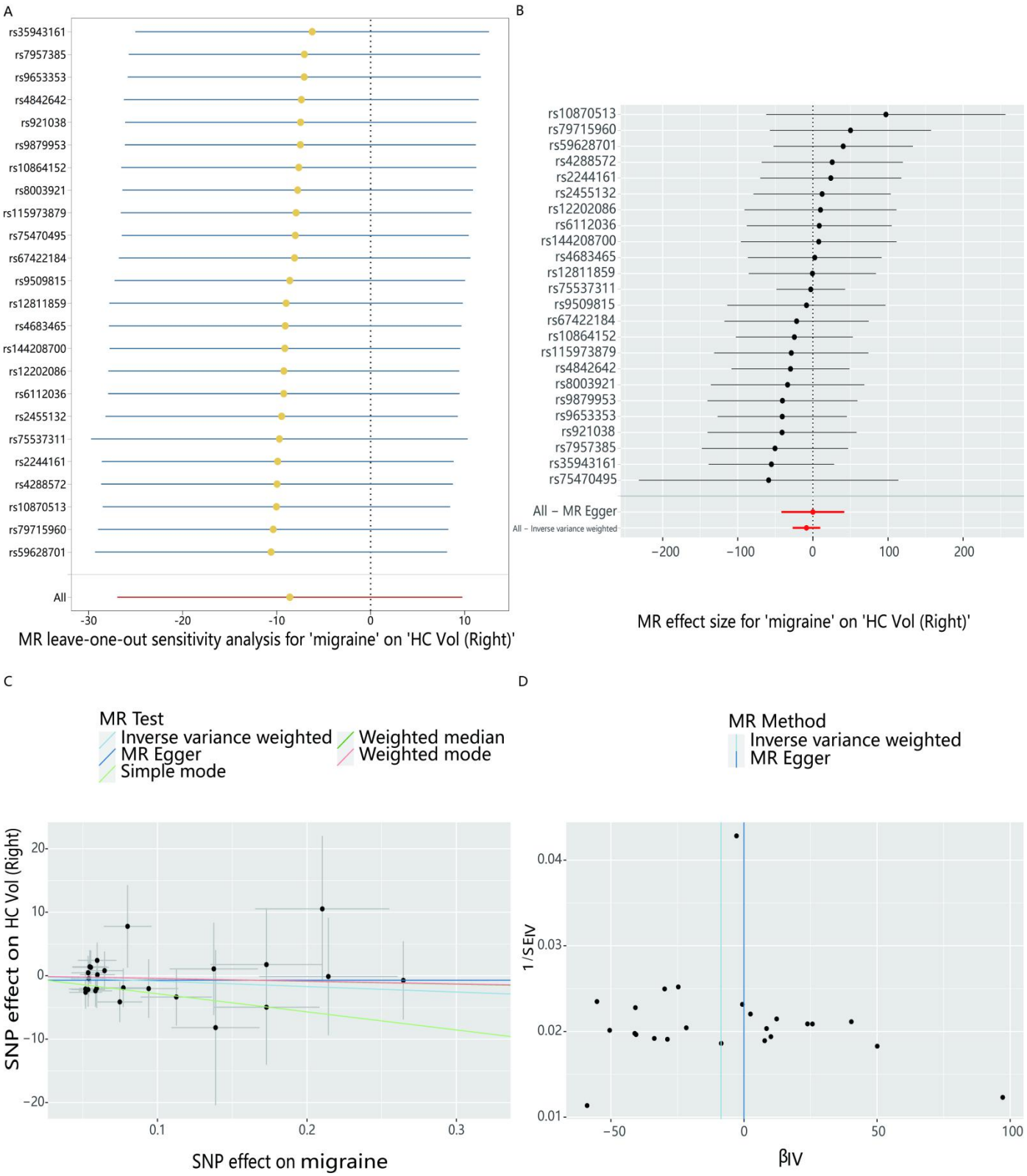


Fig. S96 The causal effect of migraine on Right hippocampal volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

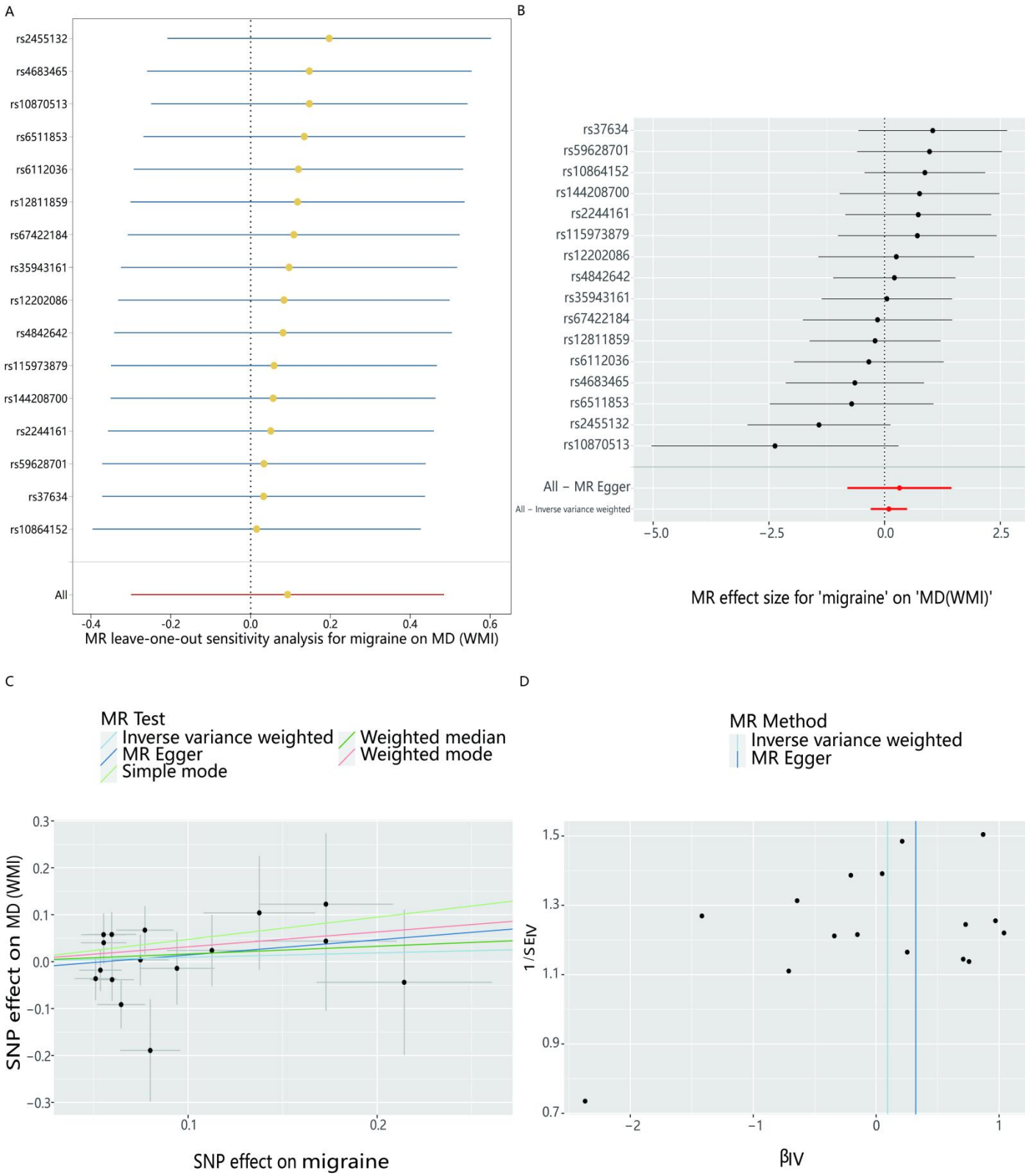


Fig. S97 The causal effect of migraine on mean diffusivity of White matter integrity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

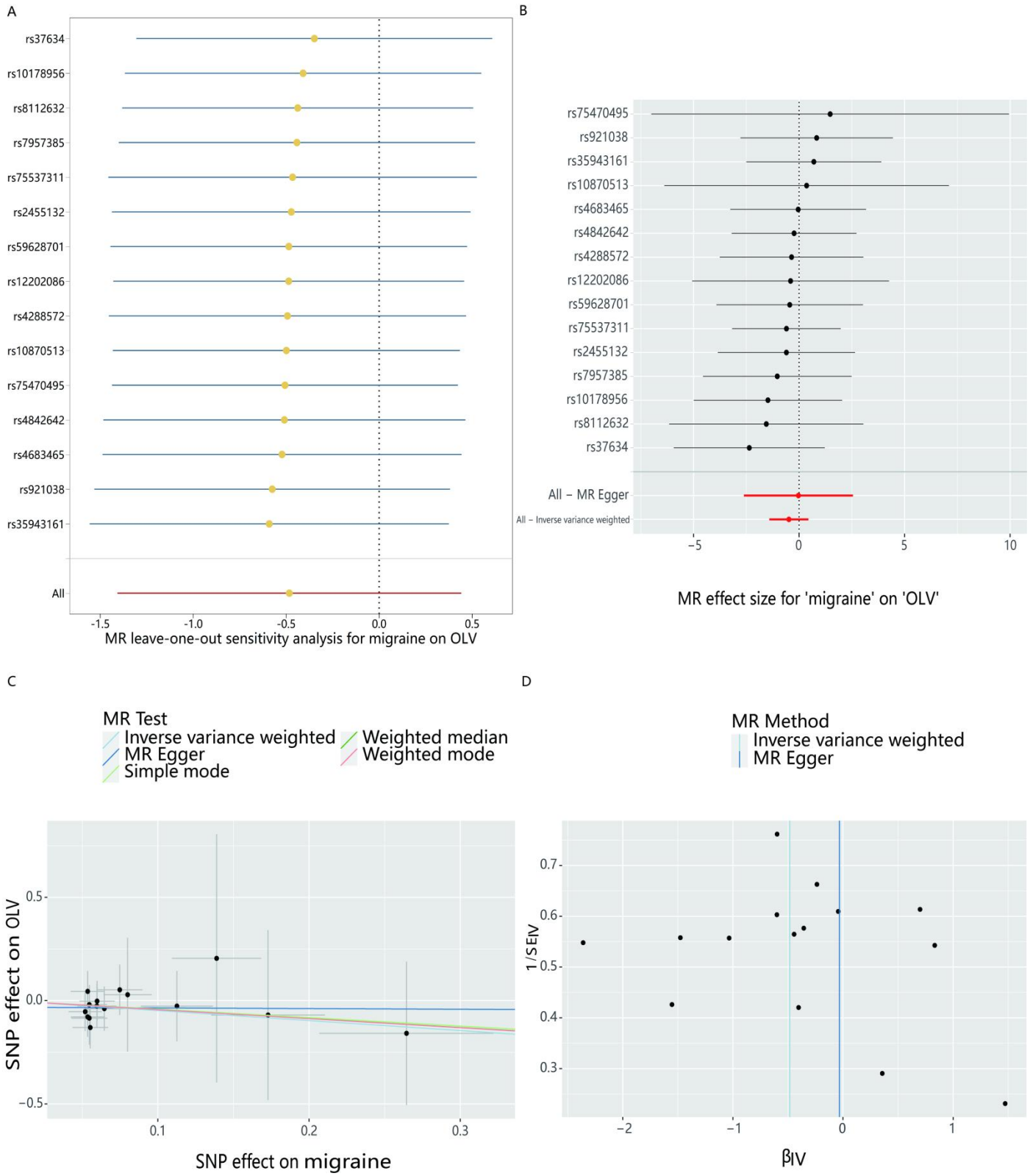


Fig. S98 The causal effect of migraine on Occipital lobe volume measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

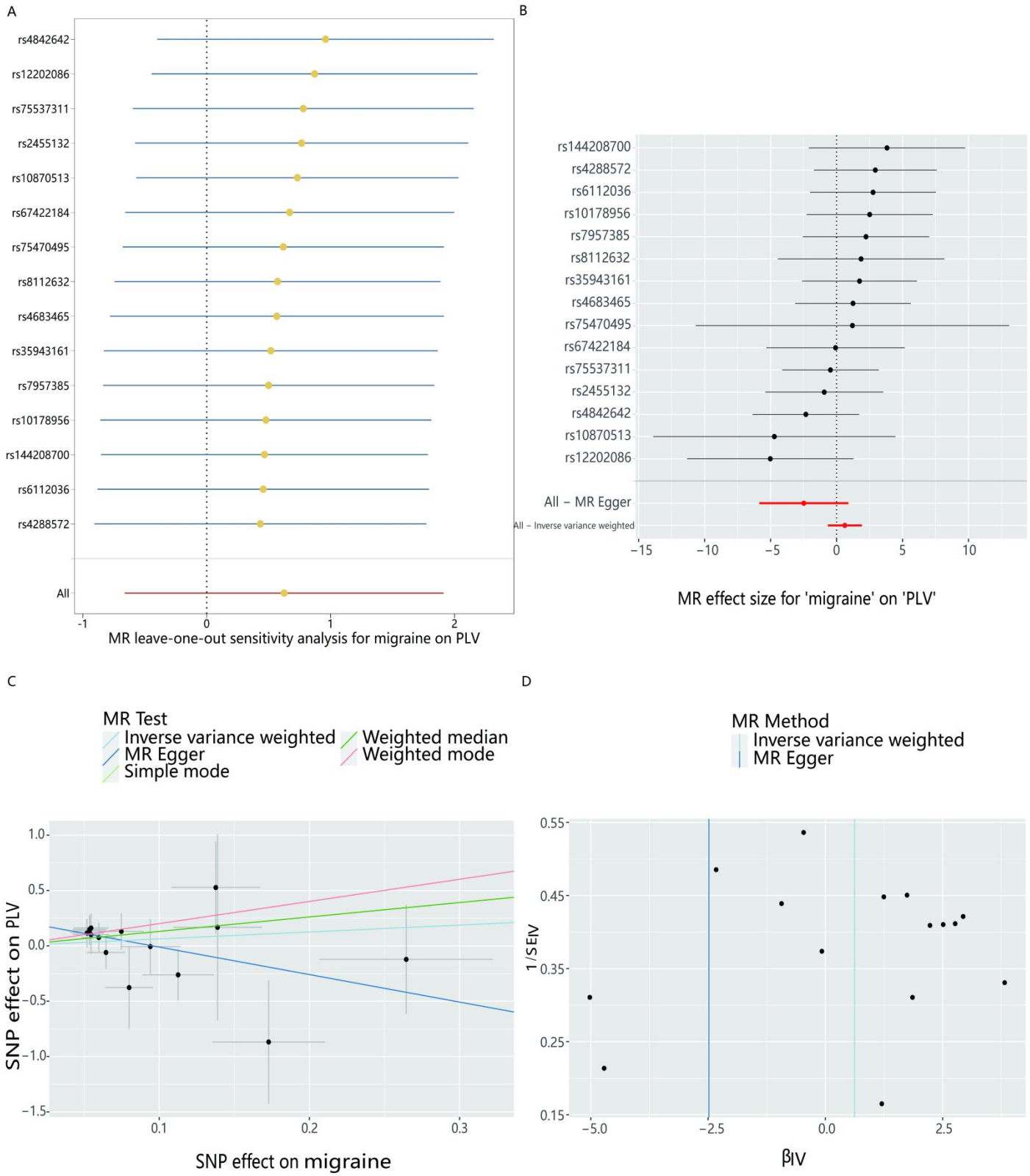


Fig. S99 The causal effect of migraine on Parietal lobe volume measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

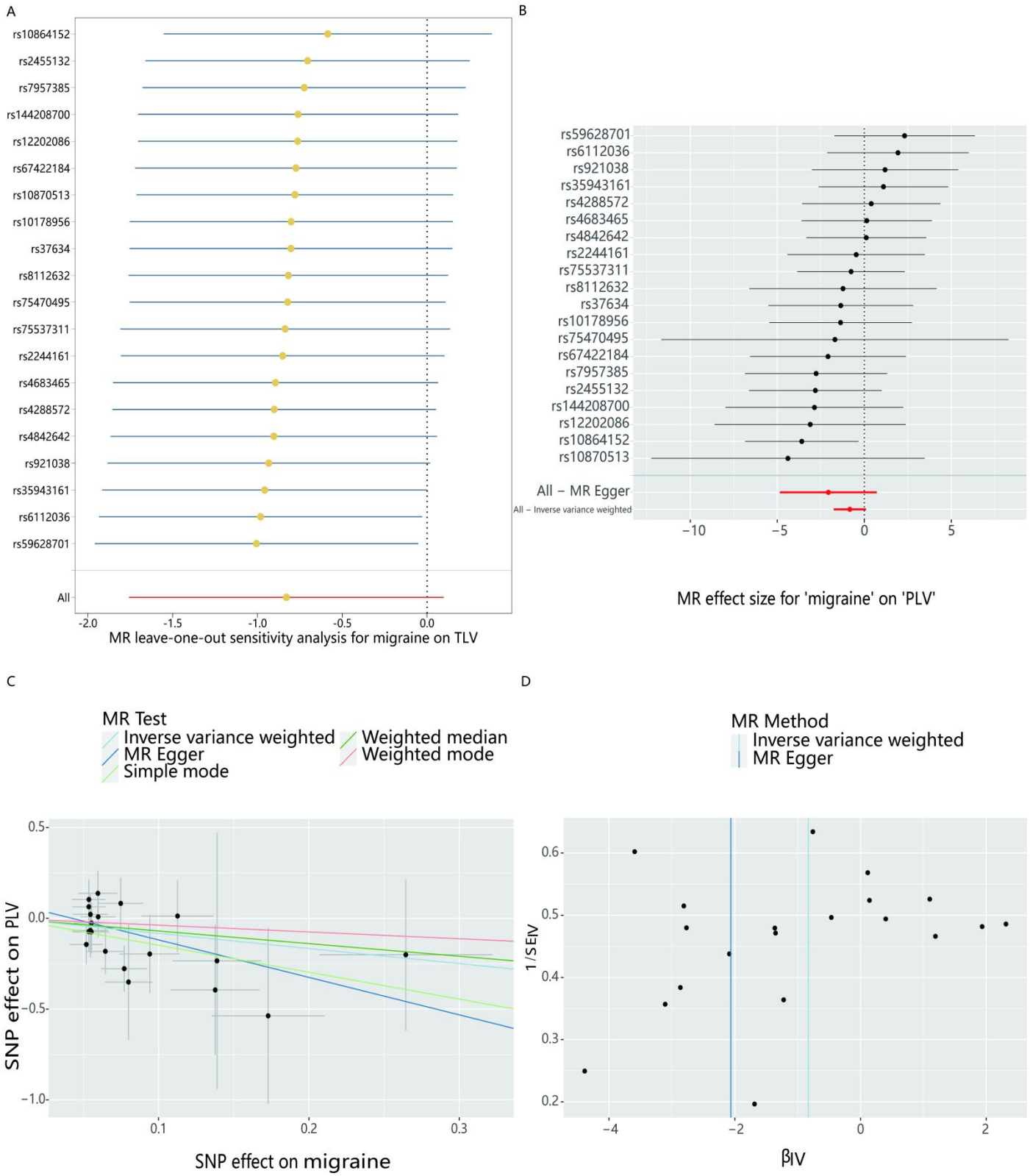


Fig. S100 The causal effect of migraine on Temporal lobe volume measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

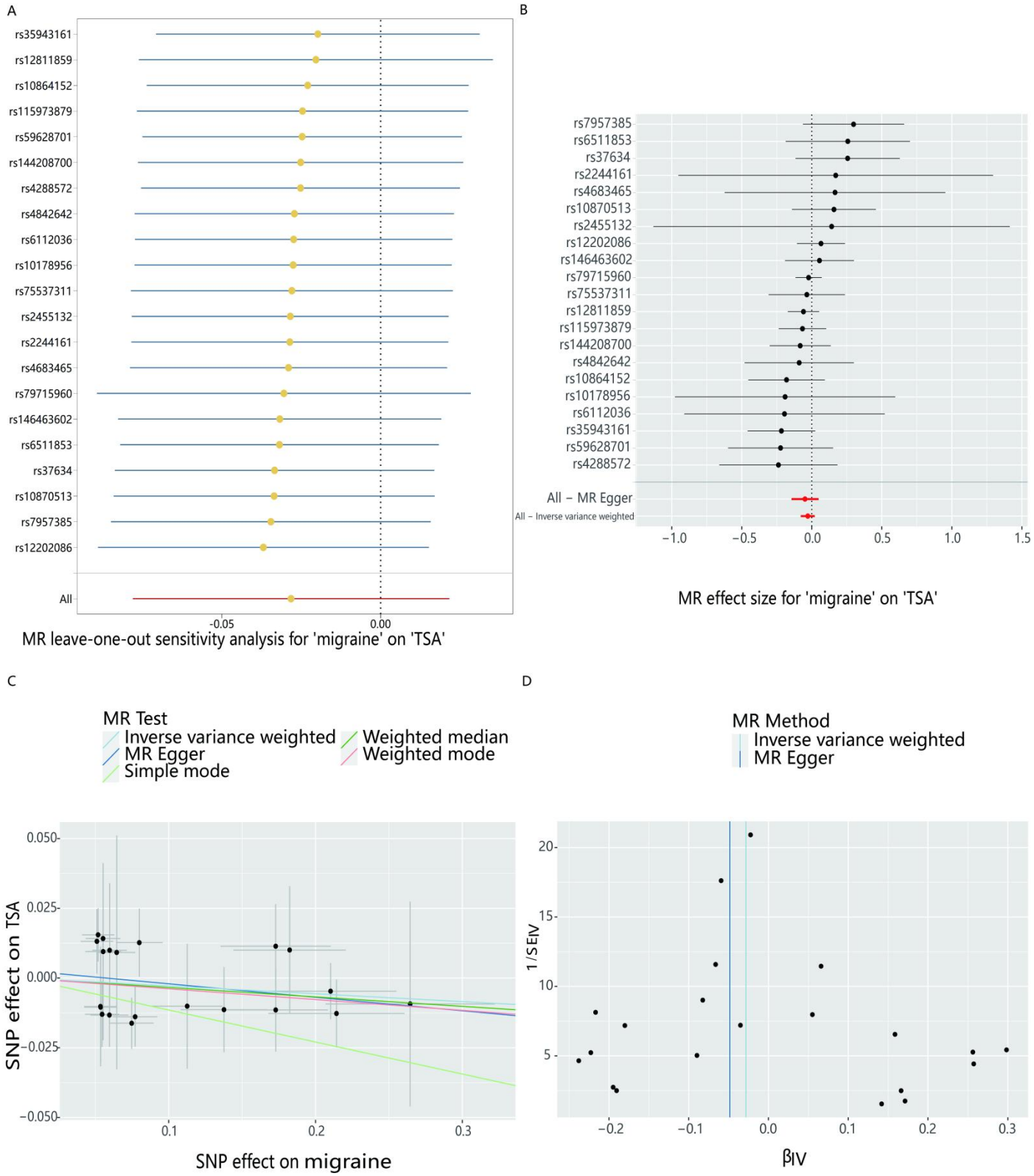


Fig. S101 The causal effect of migraine on Total surface area measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

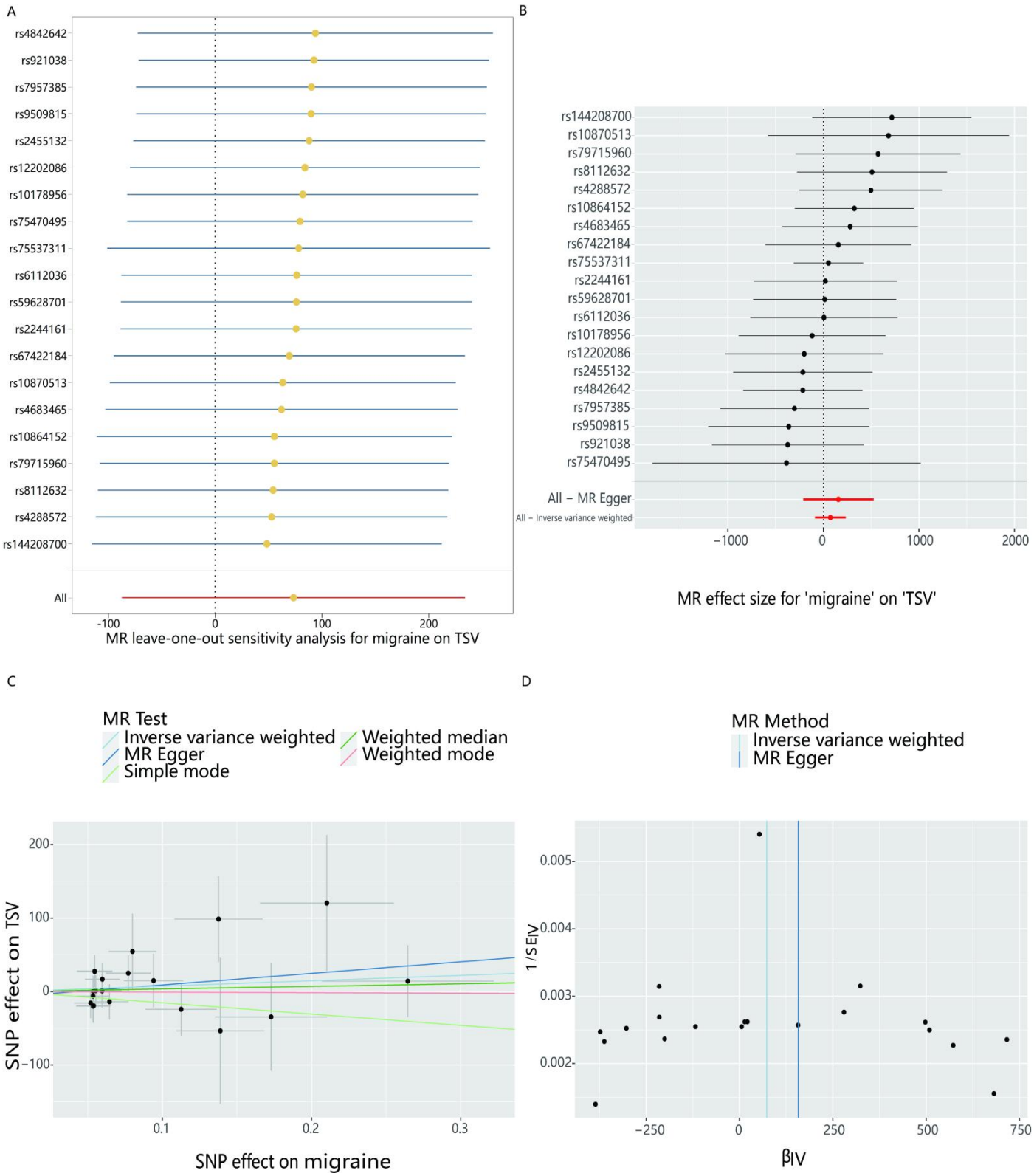


Fig. S102 The causal effect of migraine on Total subcortical volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

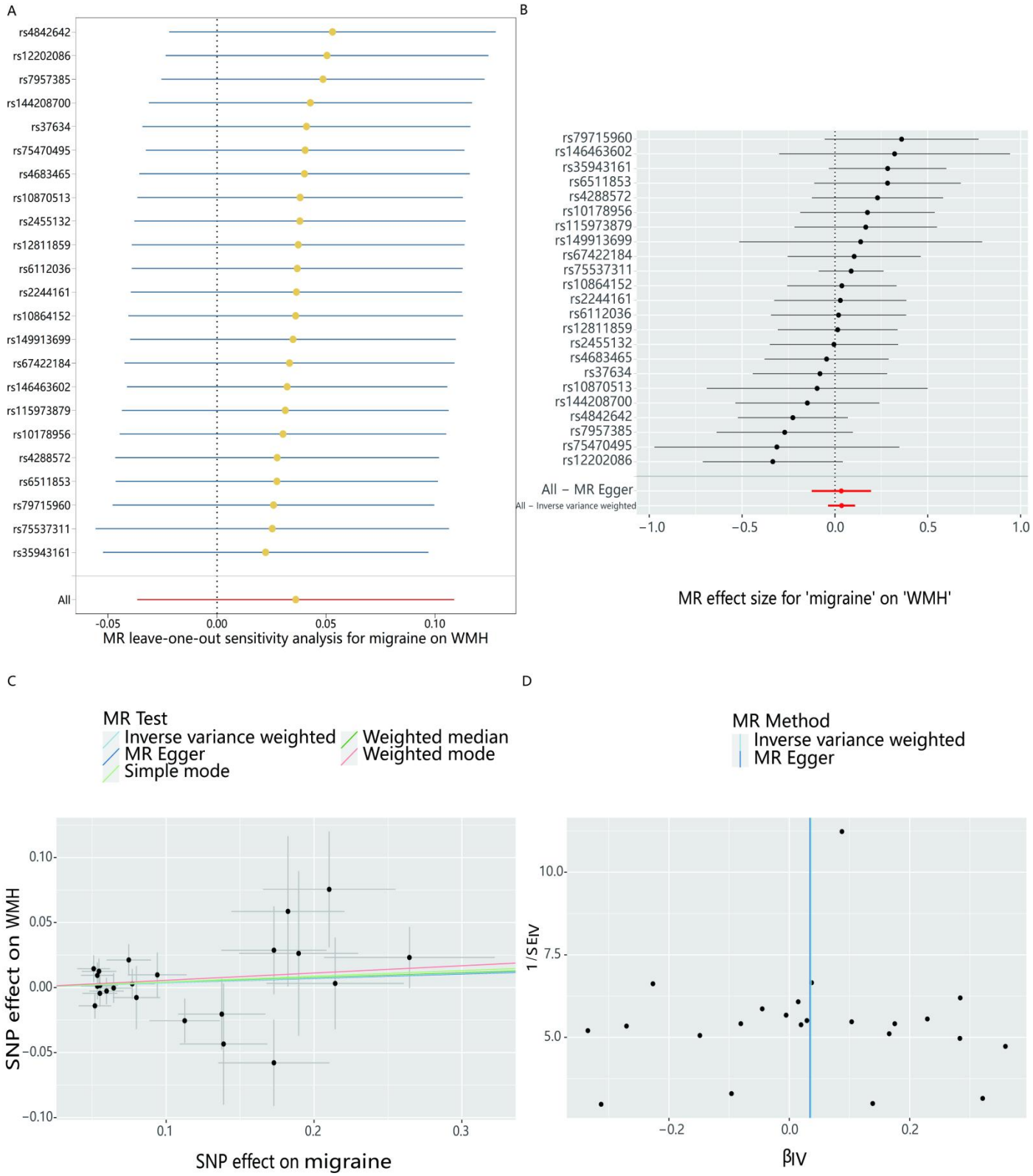


Fig. S103 The causal effect of migraine on White matter hyperintensity measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

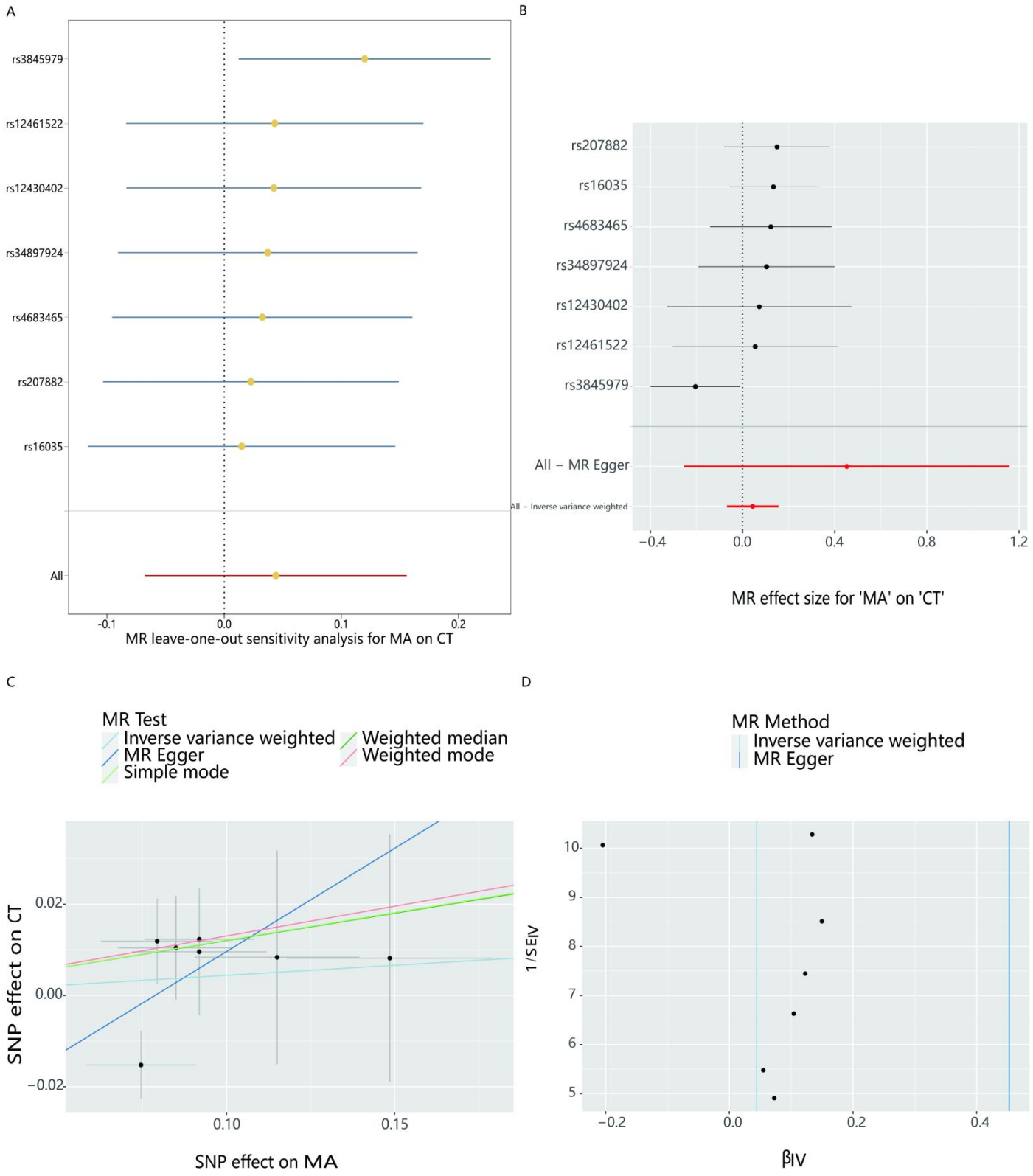


Fig. S104 The causal effect of migraine with aura on Cortical Thickness. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

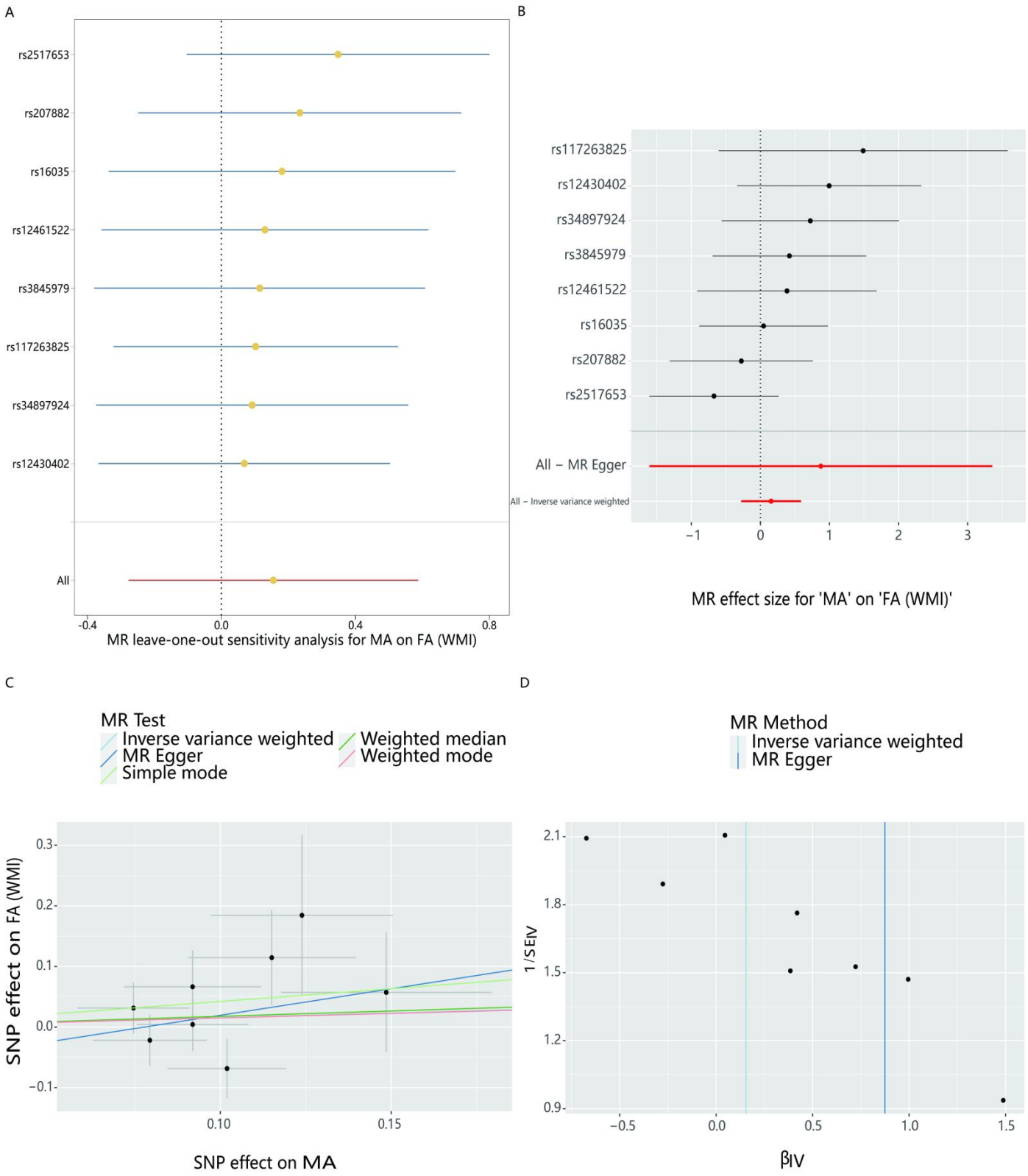


Fig. S105 The causal effect of migraine with aura on fractional anisotropy of White matter integrity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

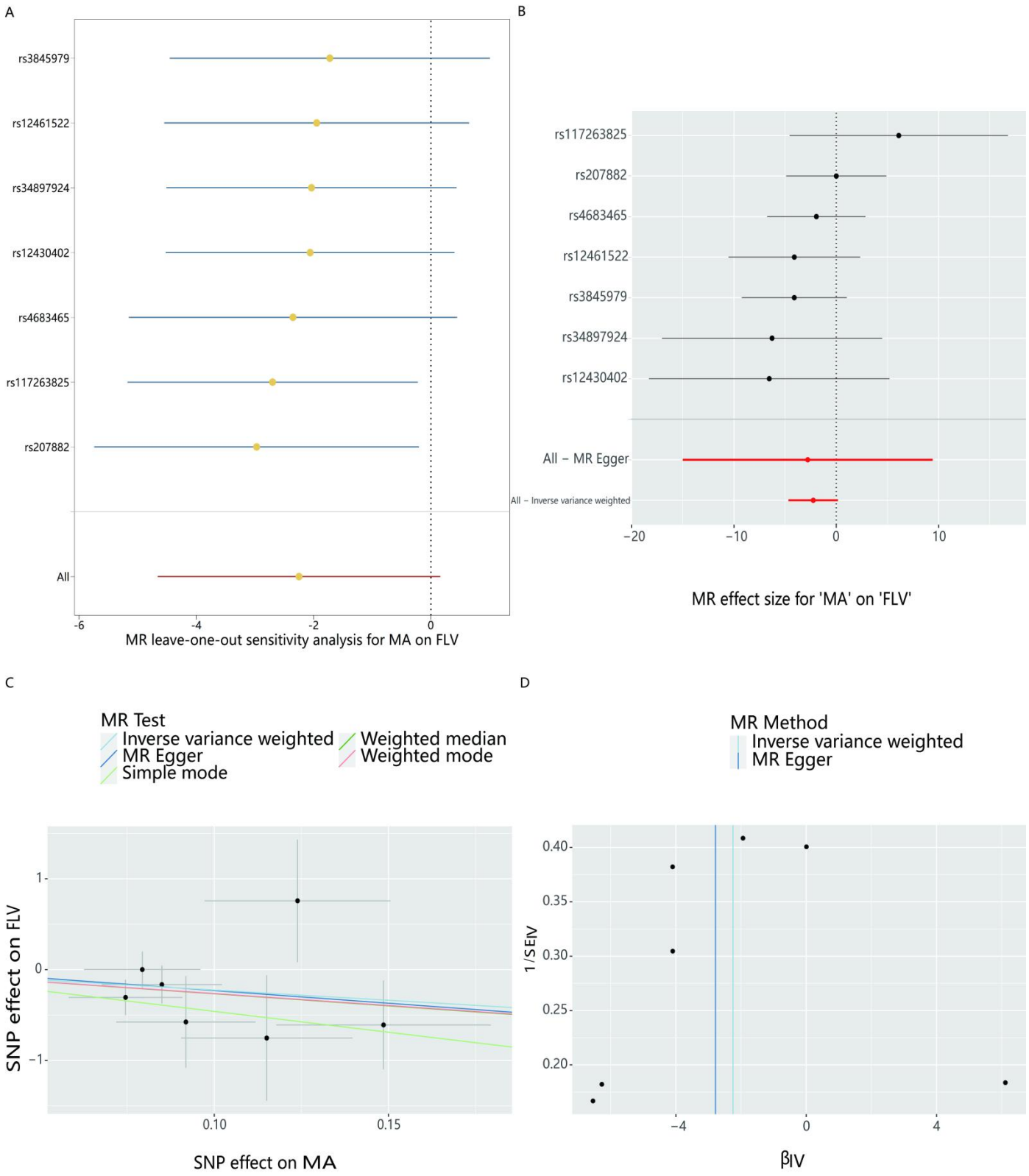


Fig. S106 The causal effect of migraine with aura on Frontal lobe volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

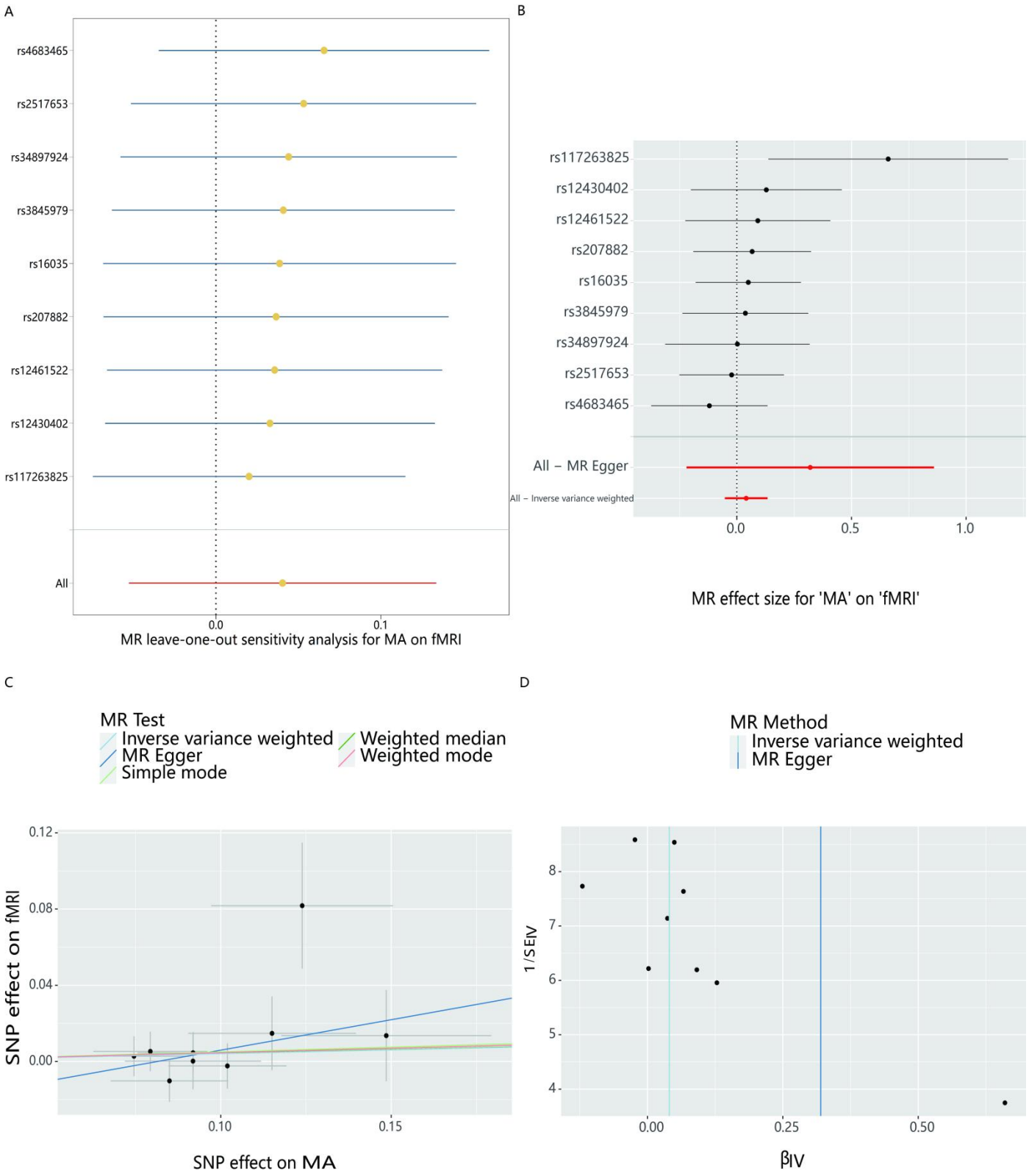


Fig. S107 The causal effect of migraine with aura on Functional brain measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

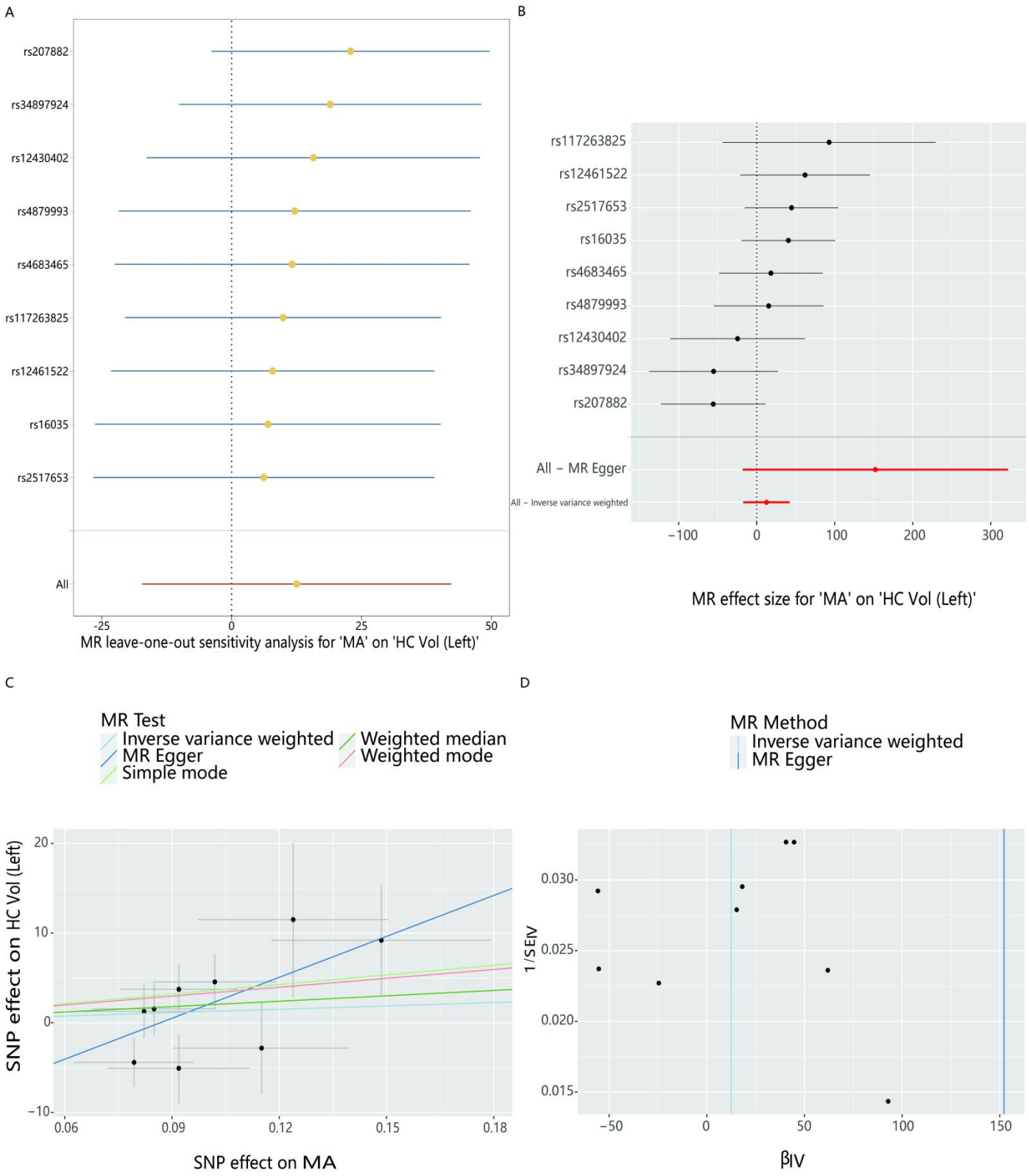


Fig. S108 The causal effect of migraine with aura on Left hippocampal volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

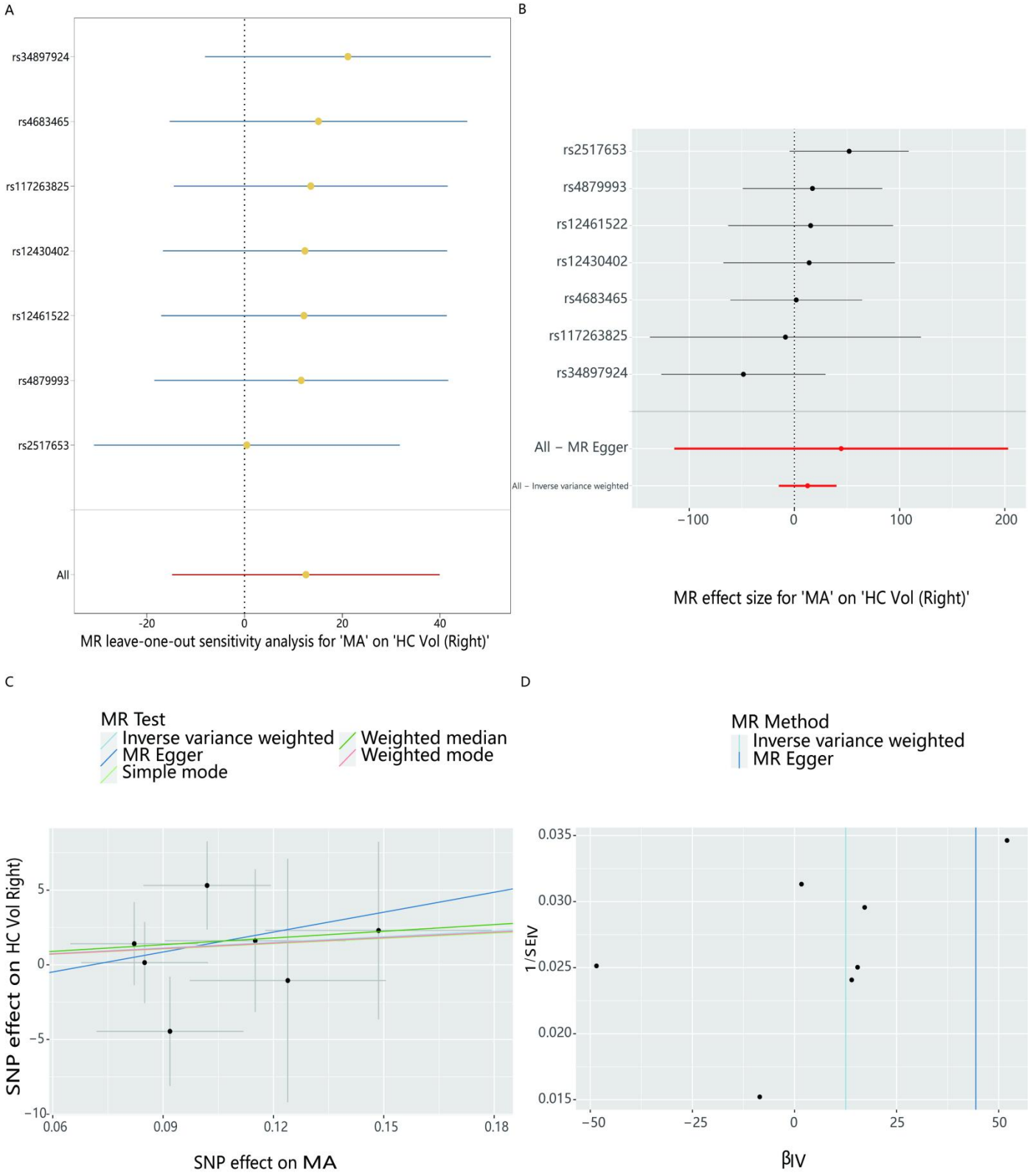


Fig. S109 The causal effect of migraine with aura on Right hippocampal volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

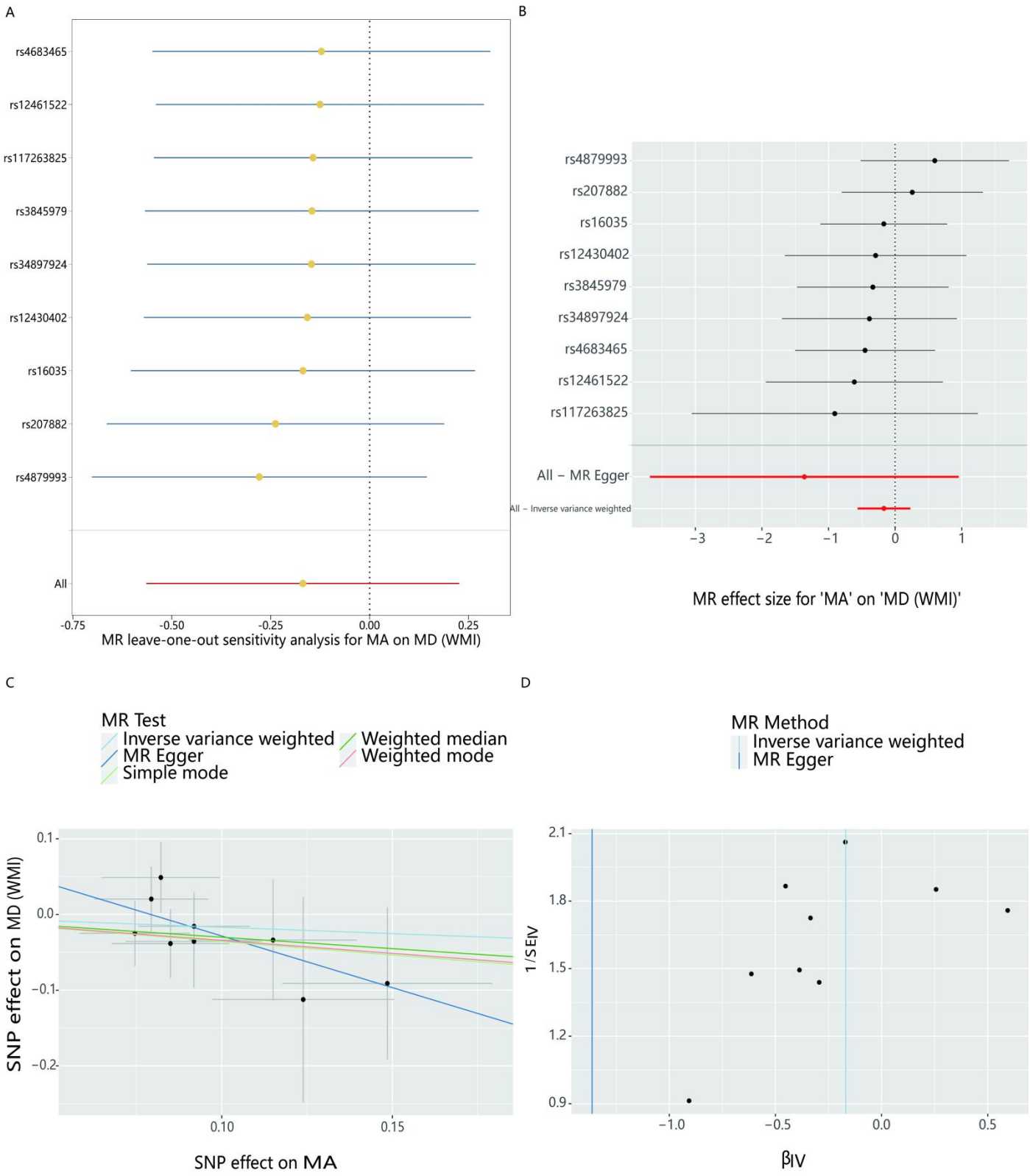


Fig. S110 The causal effect of migraine with aura on mean diffusivity of White matter integrity. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

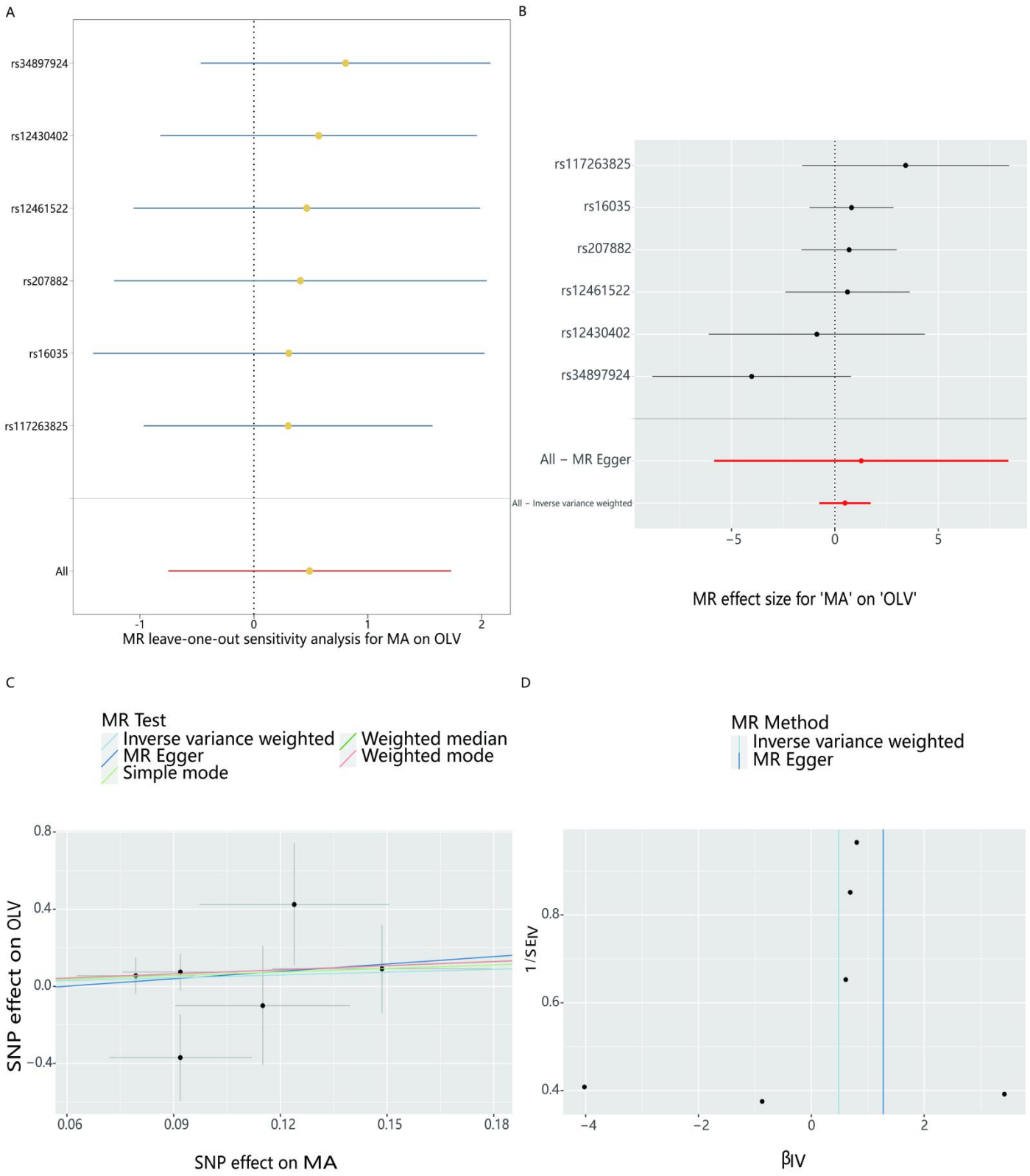


Fig. S111 The causal effect of migraine with aura on Occipital lobe volume measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

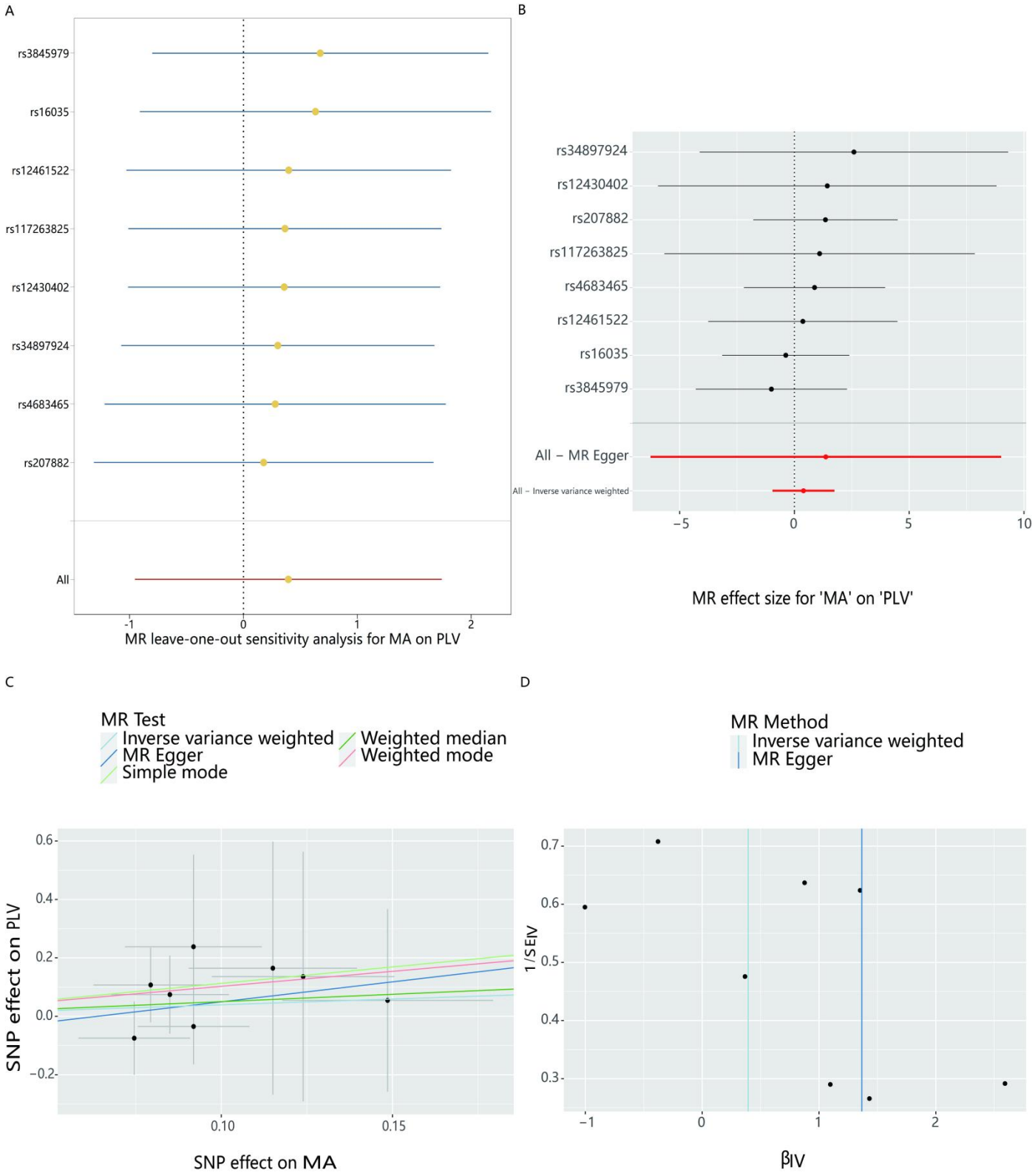


Fig. S112 The causal effect of migraine with aura on Parietal lobe volume measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

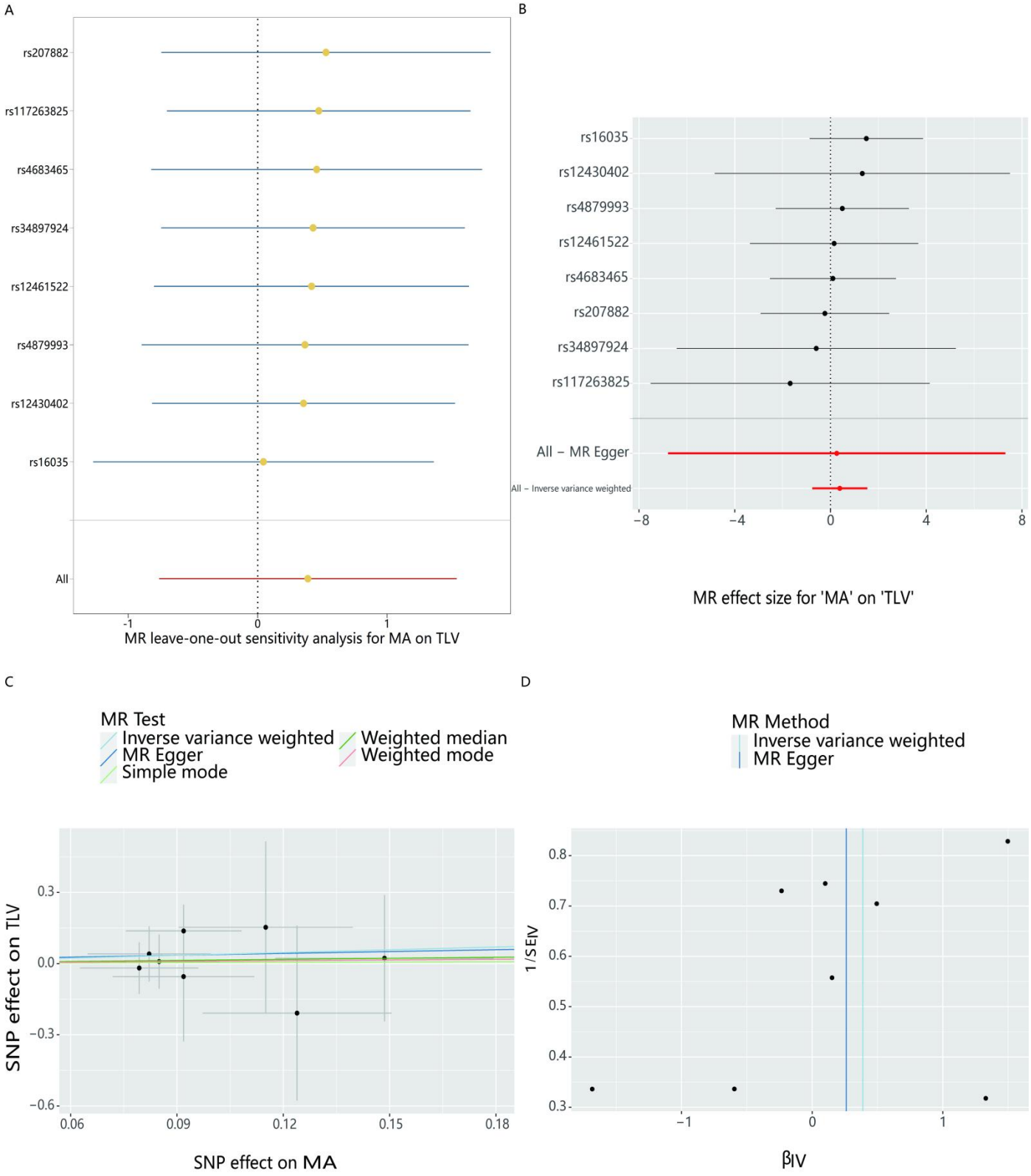


Fig. S113 The causal effect of migraine on Temporal lobe volume measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

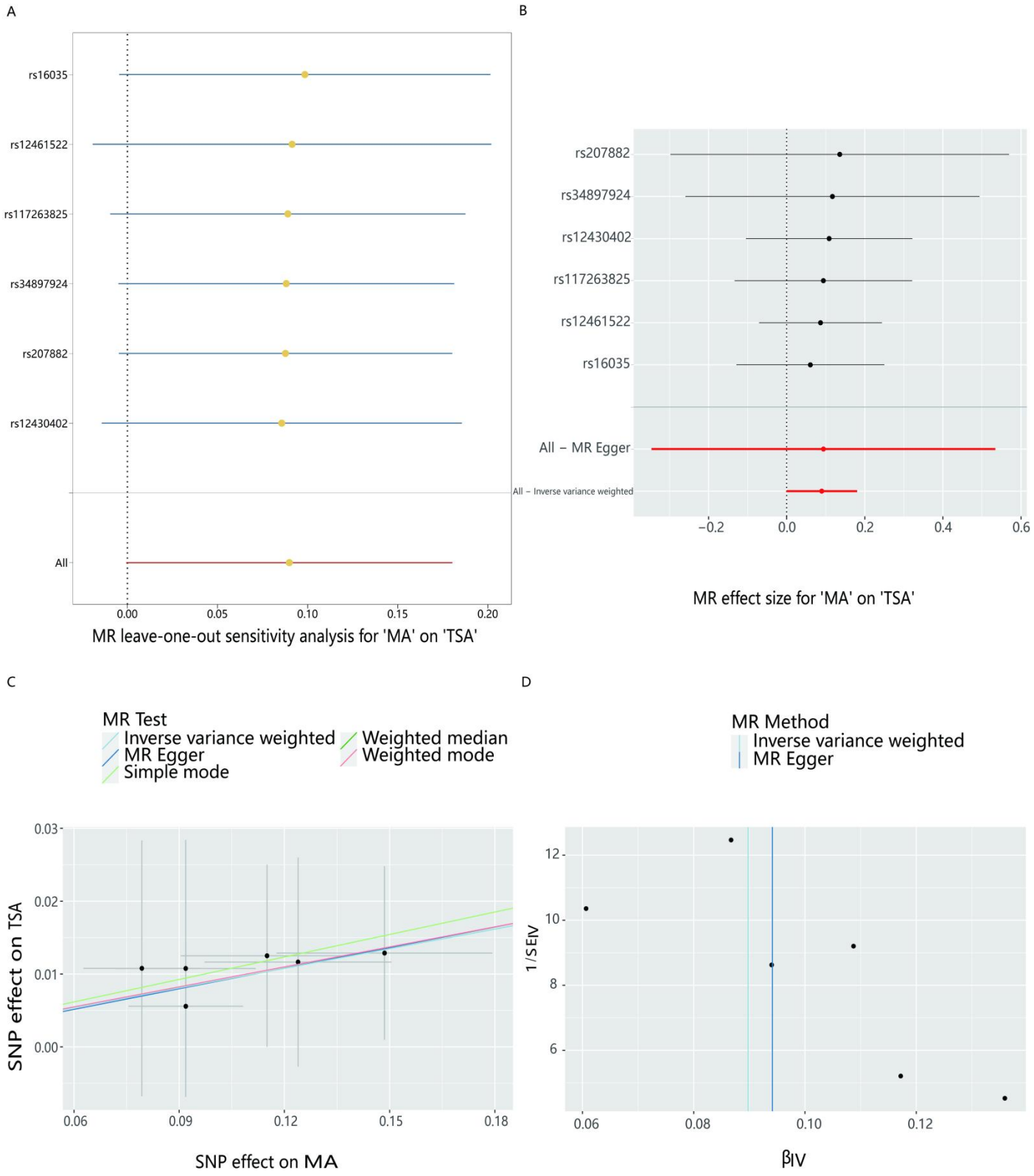


Fig. S114 The causal effect of migraine with aura on Total surface area measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

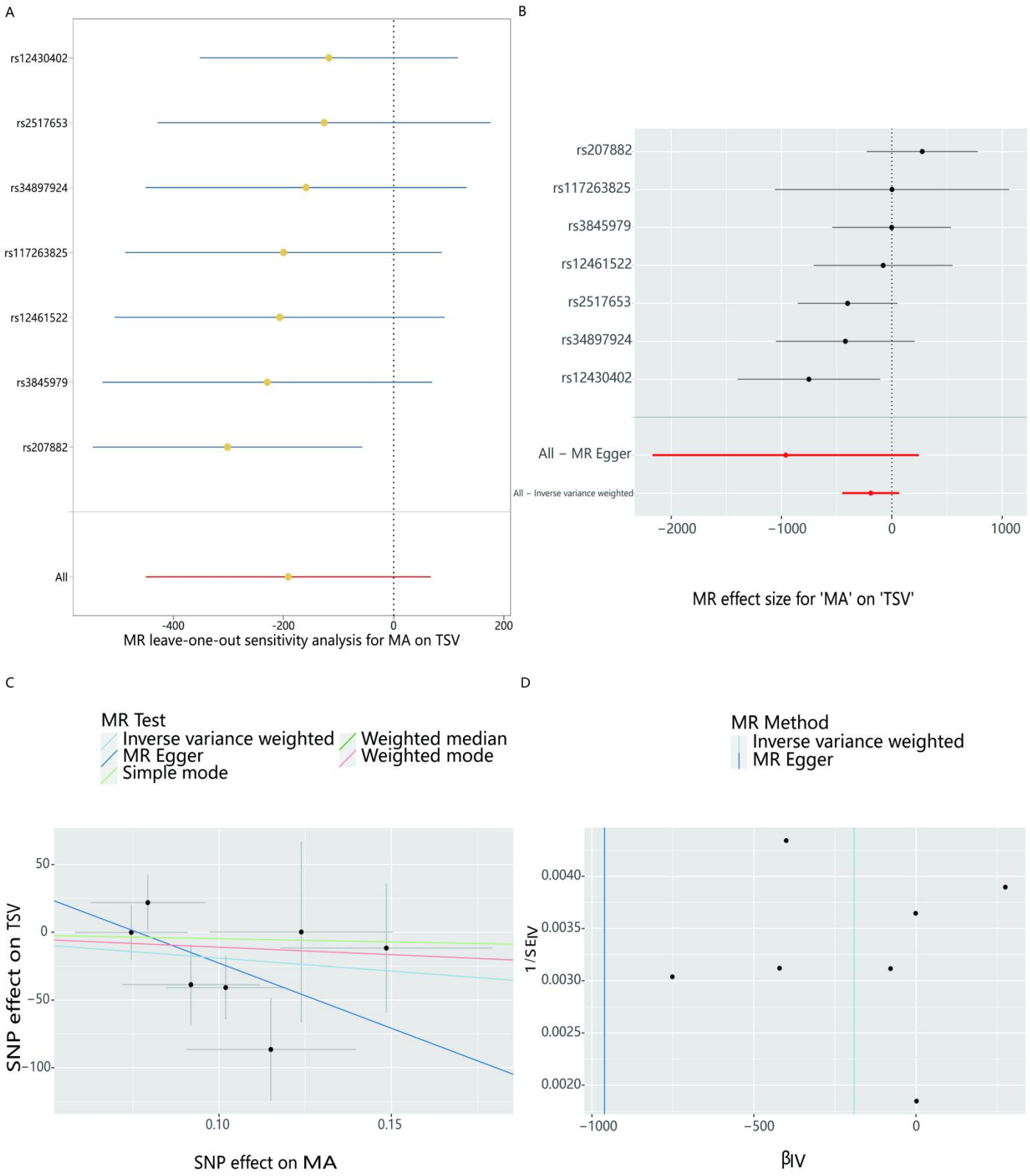


Fig. S115 The causal effect of migraine with aura on Total subcortical volume. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

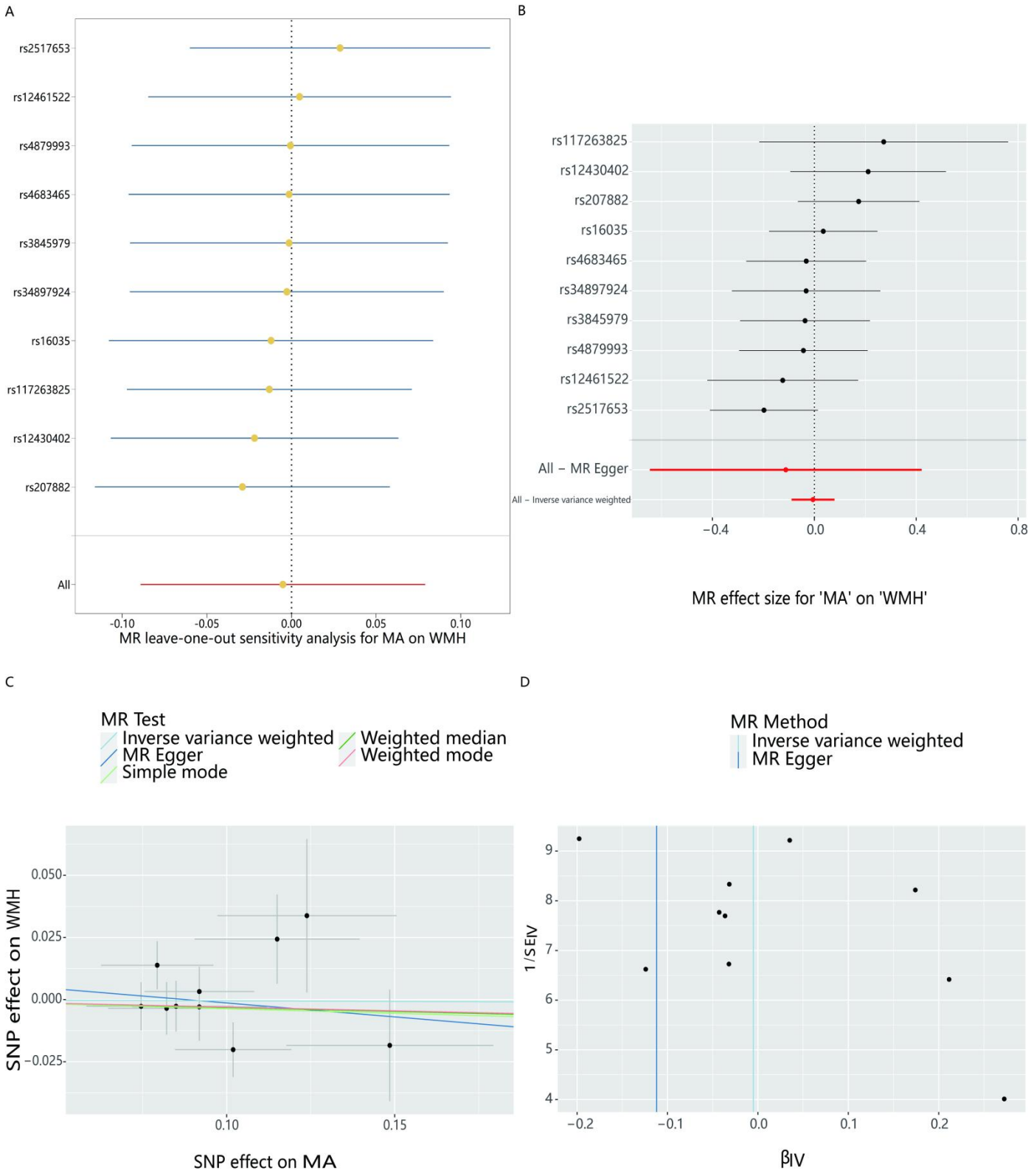
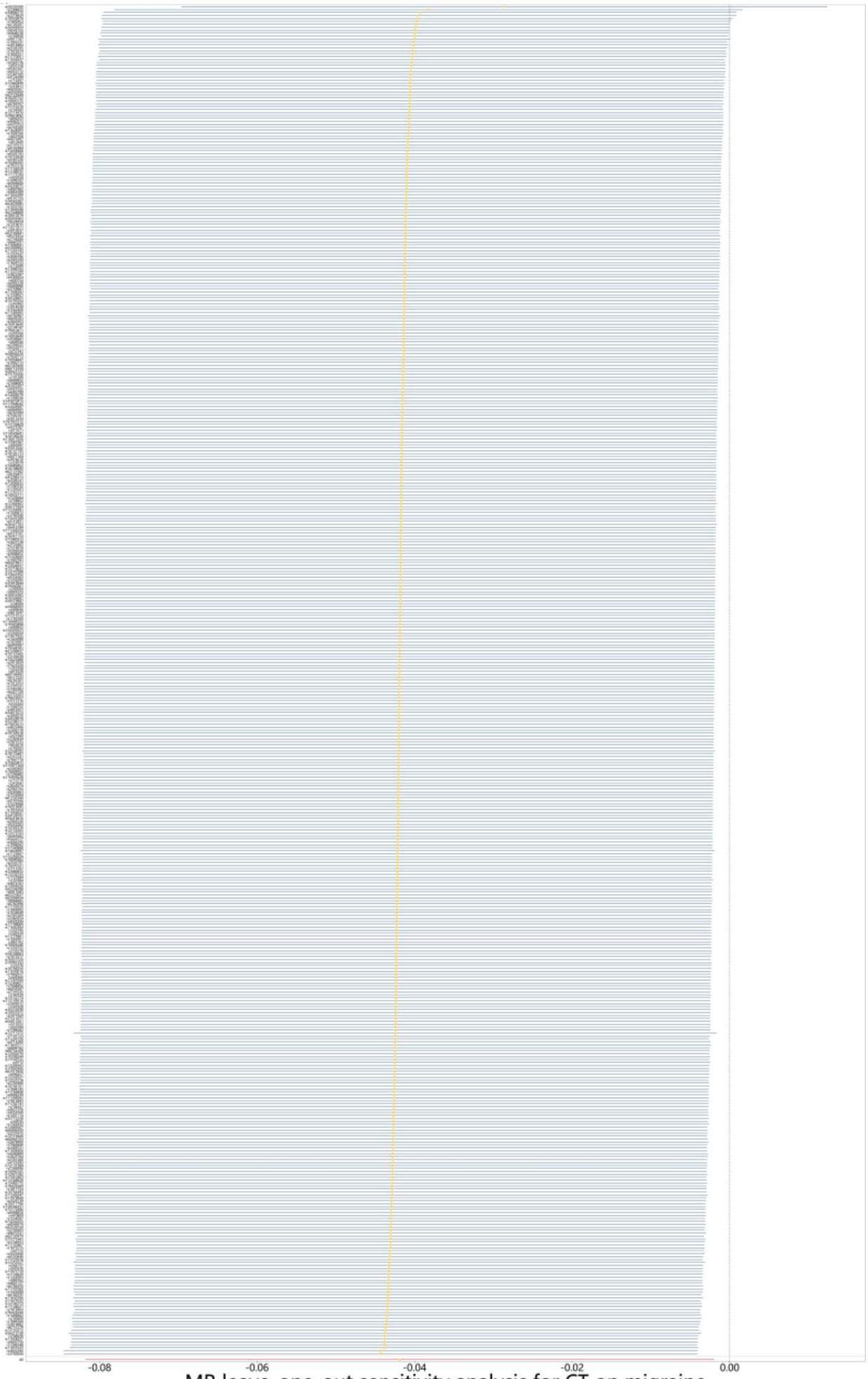
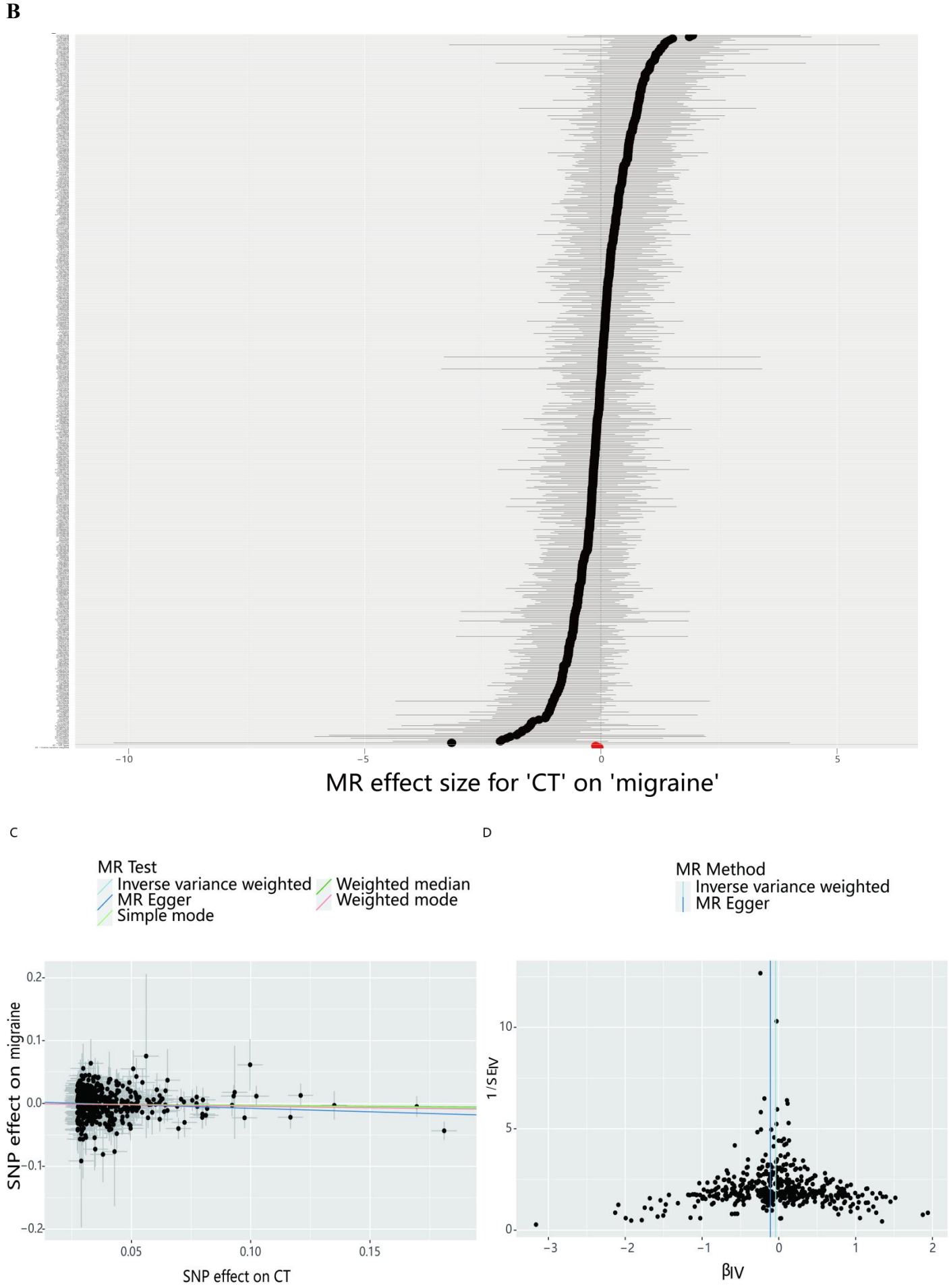


Fig. S116 The causal effect of migraine with aura on White matter hyperintensity measurement. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

1

A


-0.08
-0.06
-0.04
-0.02
0.00
MR leave-one-out sensitivity analysis for CT on migraine



B

Fig. S117 The causal effect of Cortical Thickness Volume on migraine. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

1 **A**

2

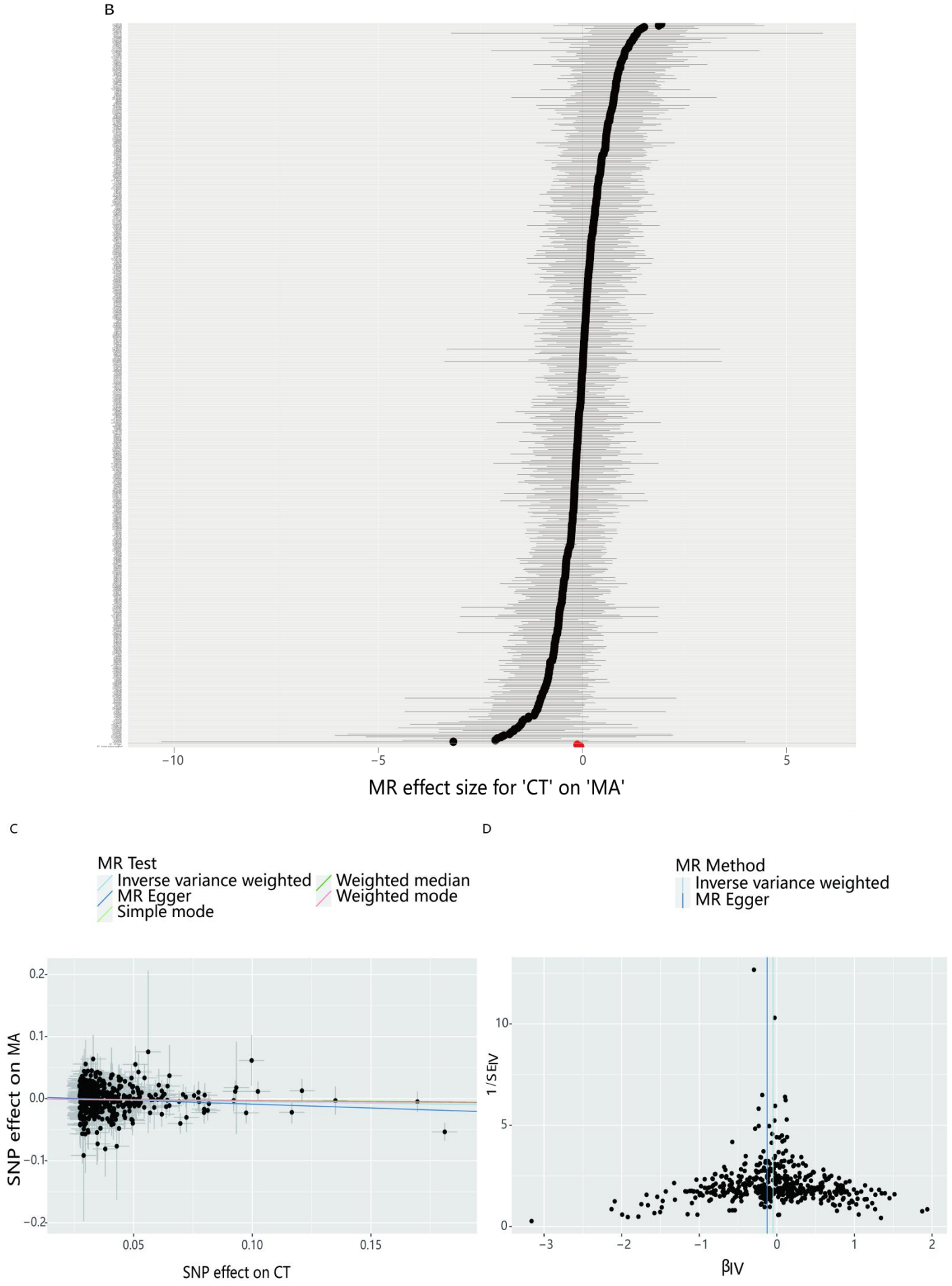


Fig. S118 The causal effect of Cortical Thickness Volume on migraine with aura. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

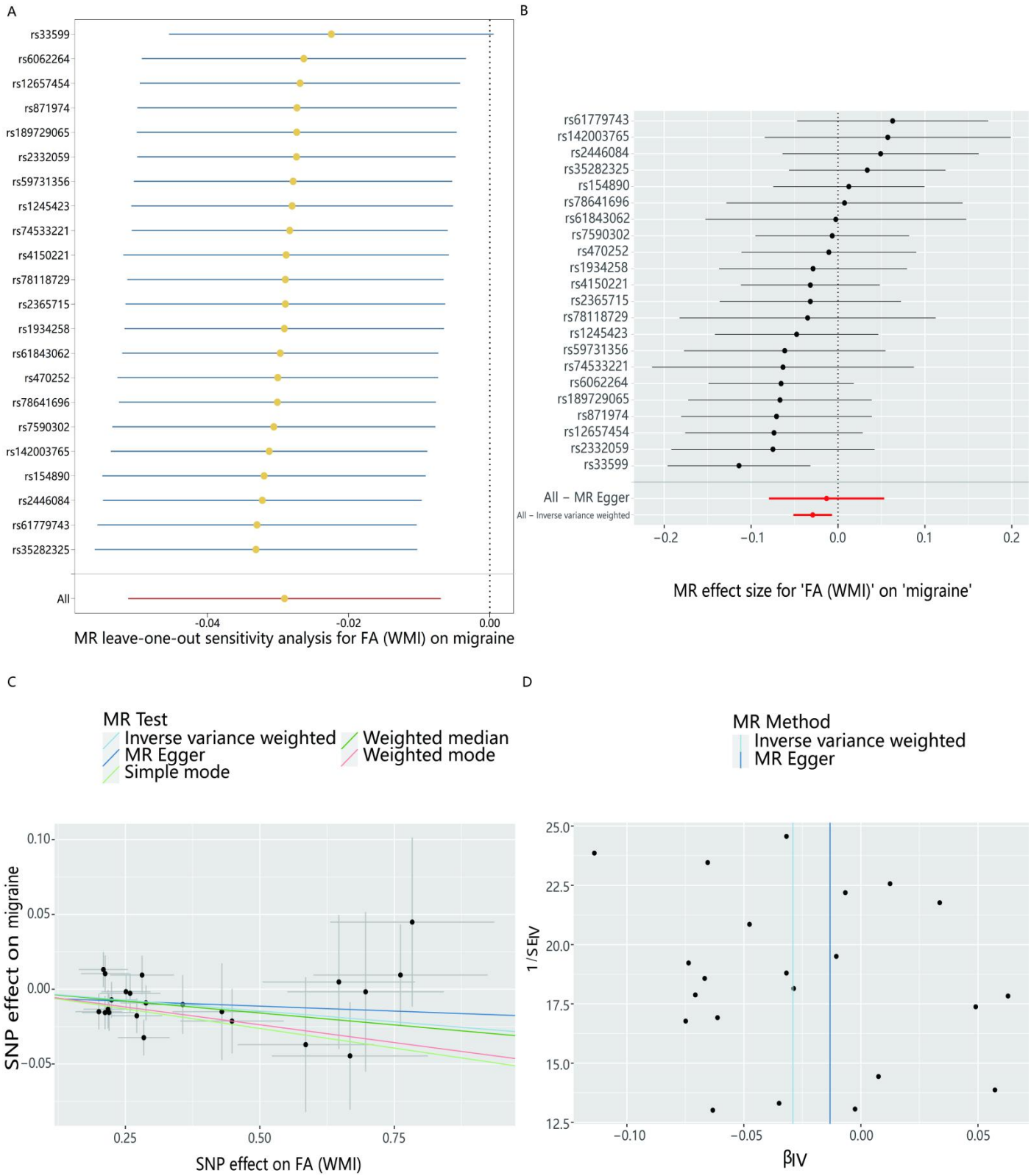


Fig. S119 The causal effect of fractional anisotropy of White matter integrity on migraine. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

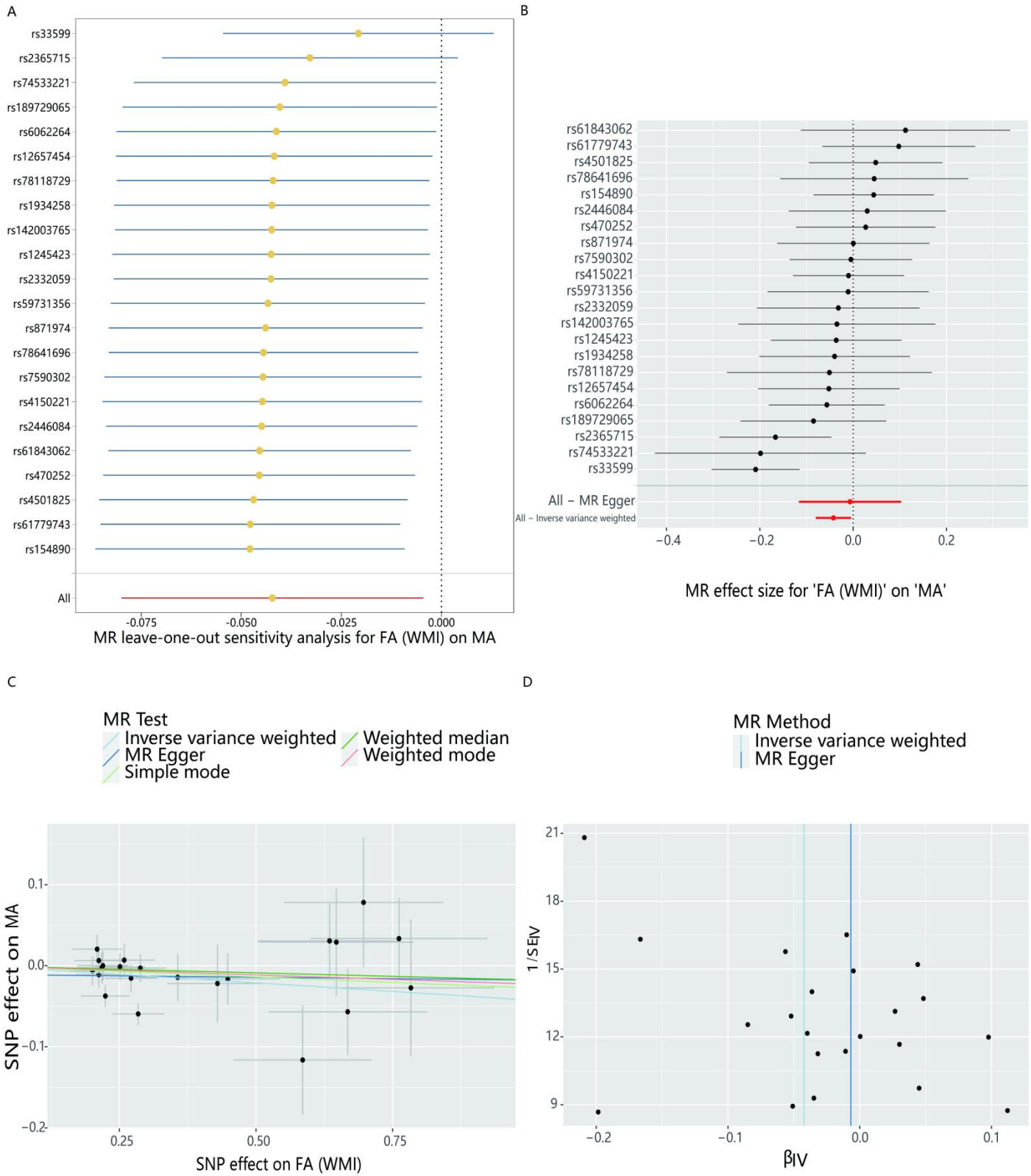


Fig. S120 The causal effect of fractional anisotropy of White matter integrity on migraine with aura. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

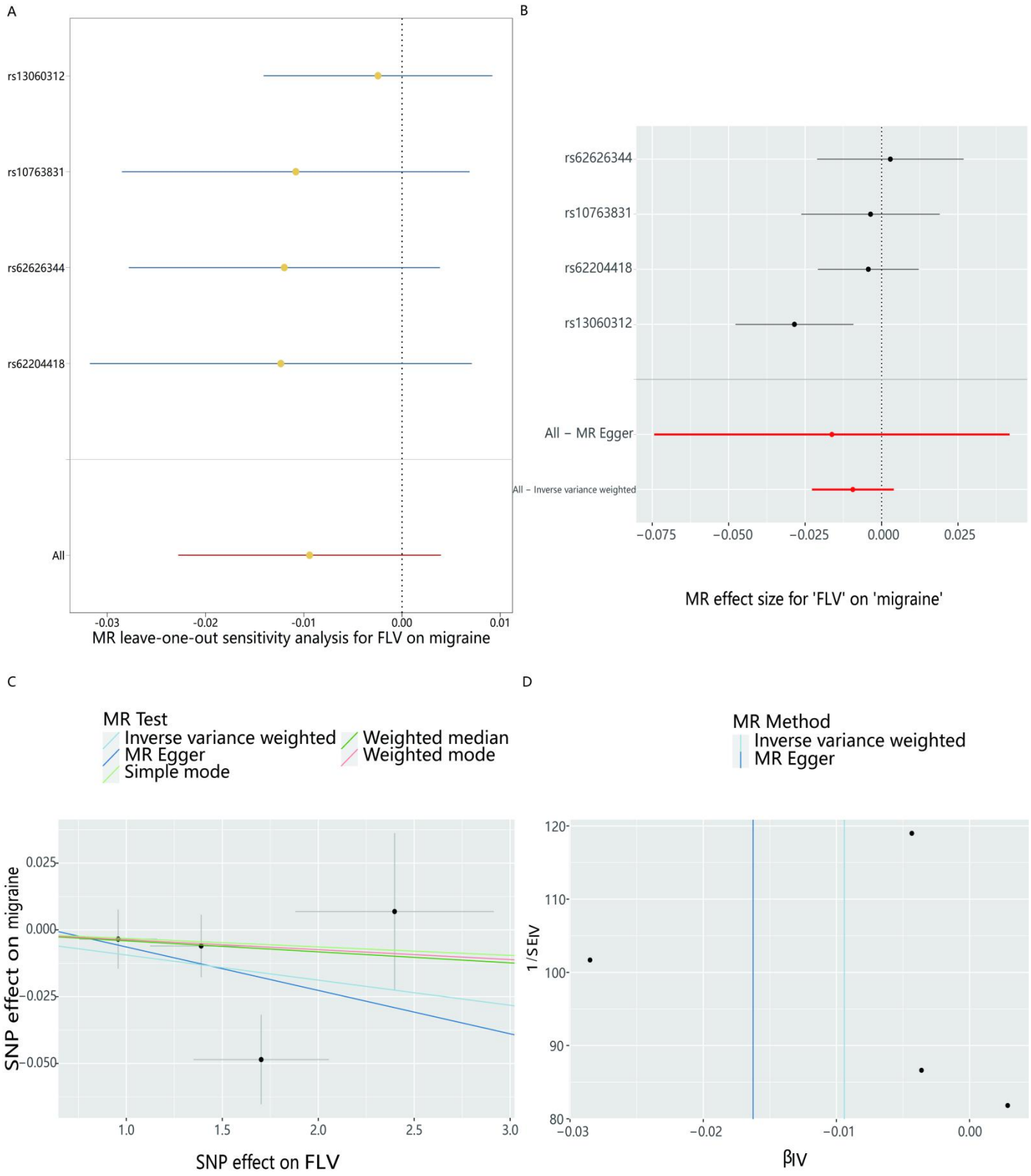


Fig. S121 The causal effect of Frontal lobe volume on migraine. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

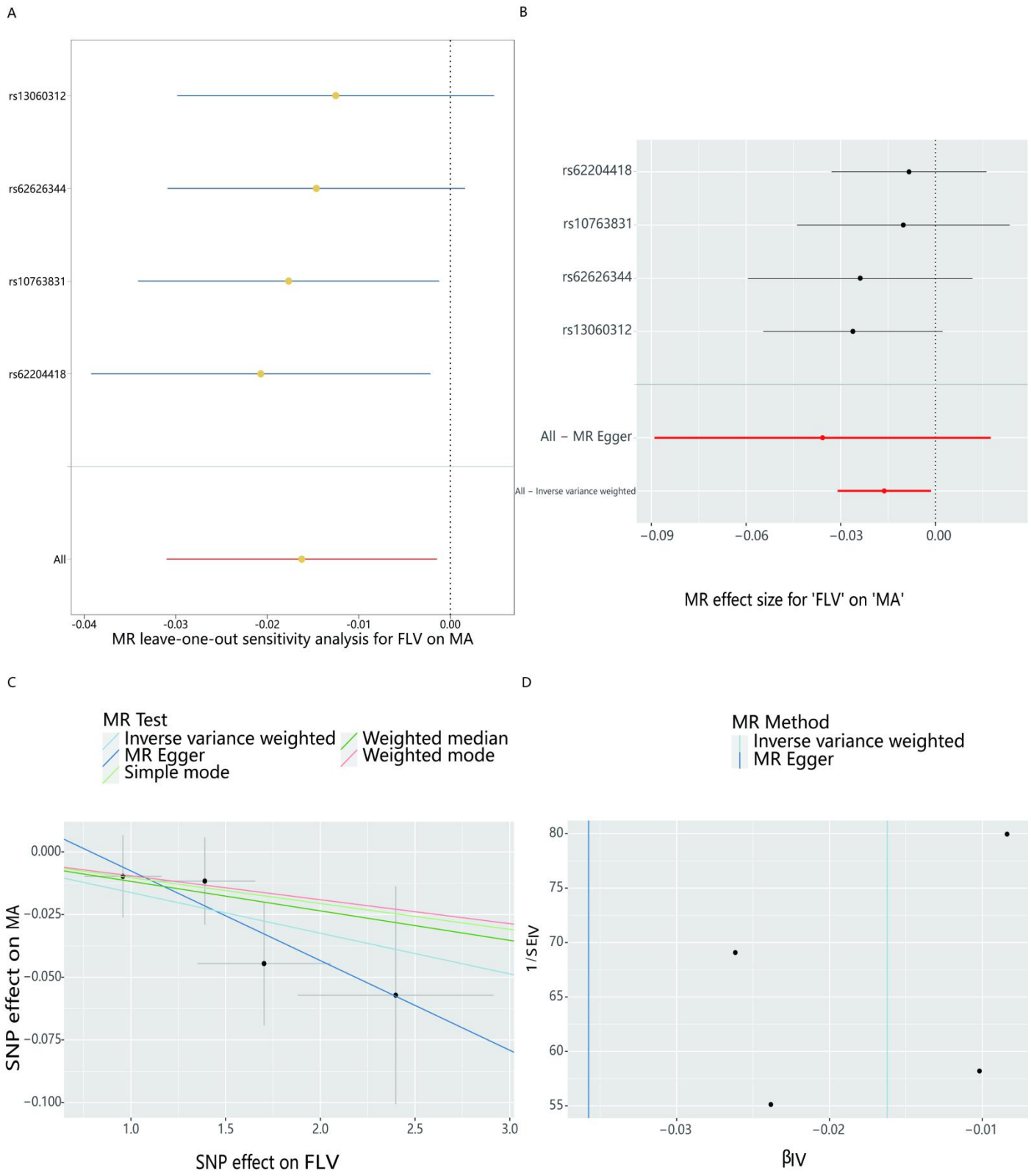


Fig. S122 The causal effect of Frontal lobe volume on migraine with aura. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

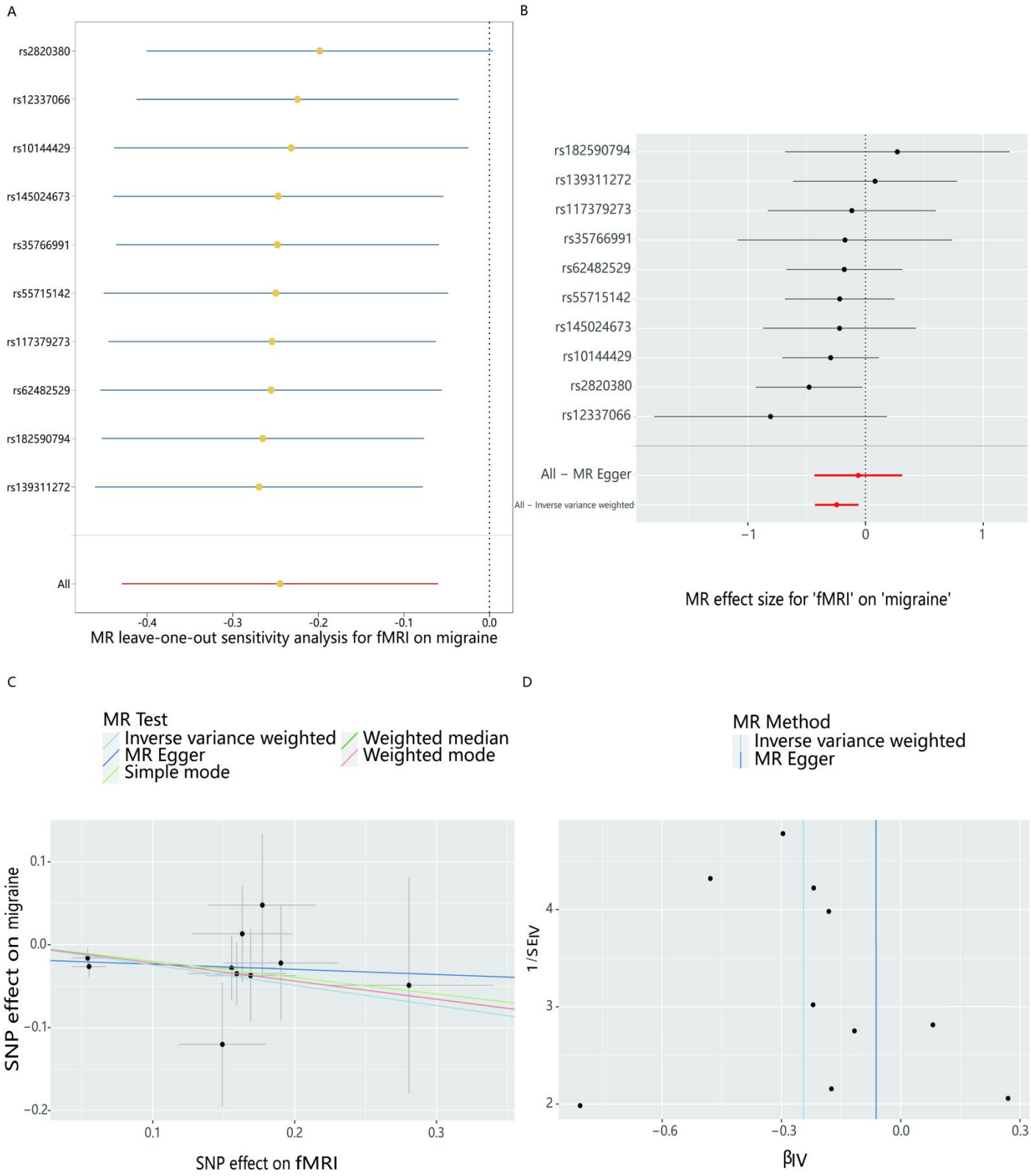


Fig. S123 The causal effect of Functional brain measurement on migraine. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

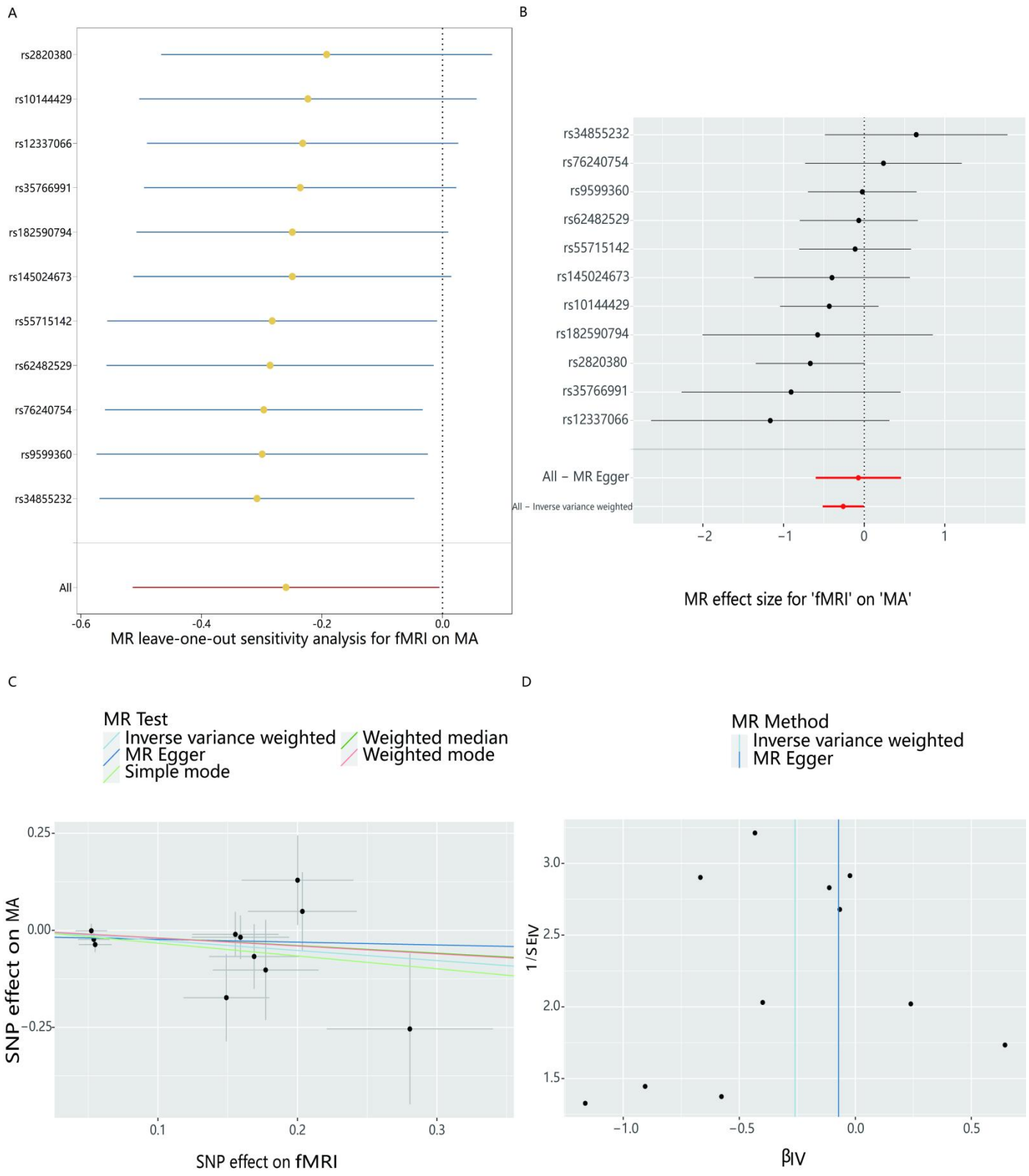


Fig. S124 The causal effect of Functional brain measurement on migraine with aura. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

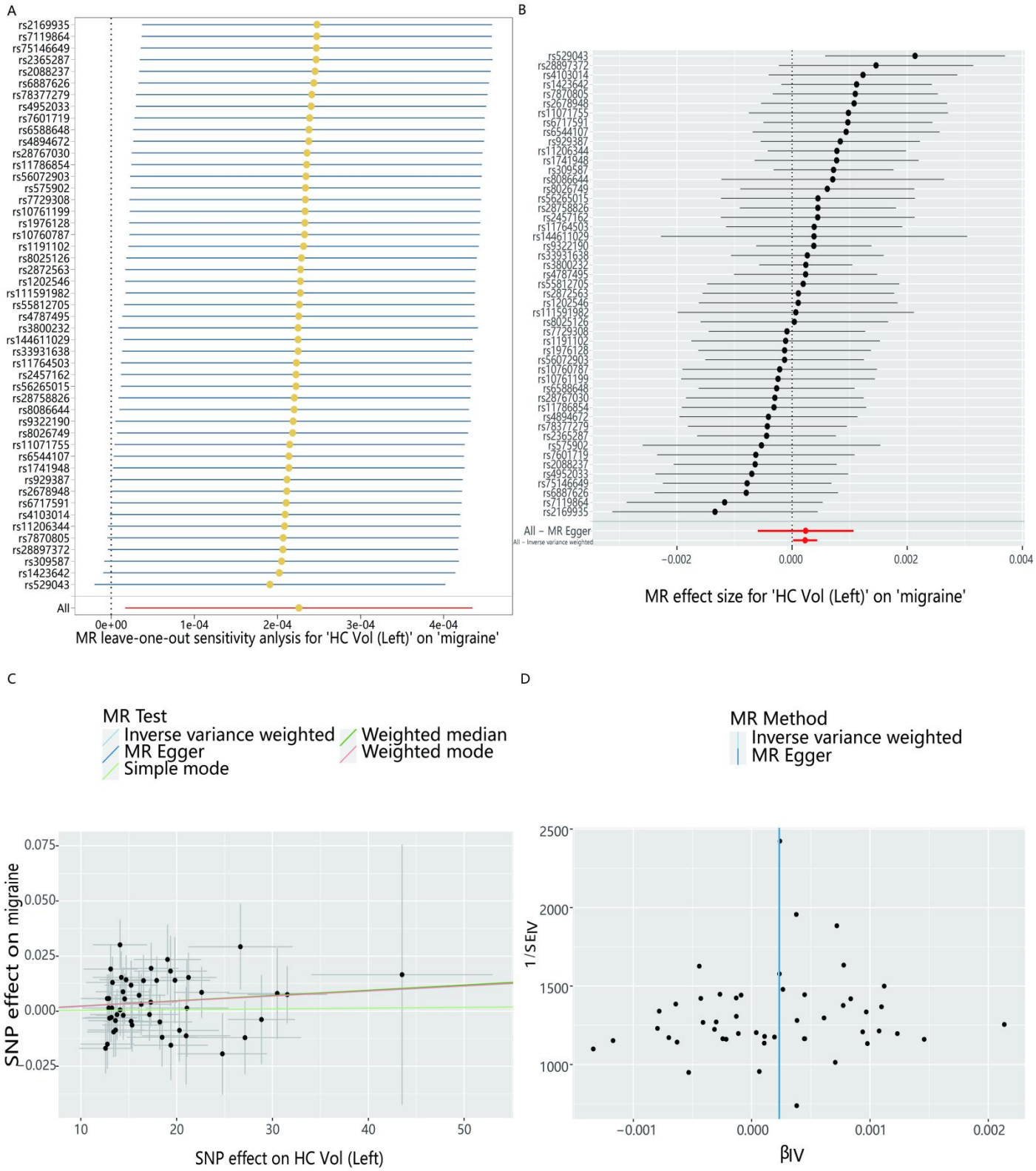


Fig. S125 The causal effect of Left hippocampal volume on migraine. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

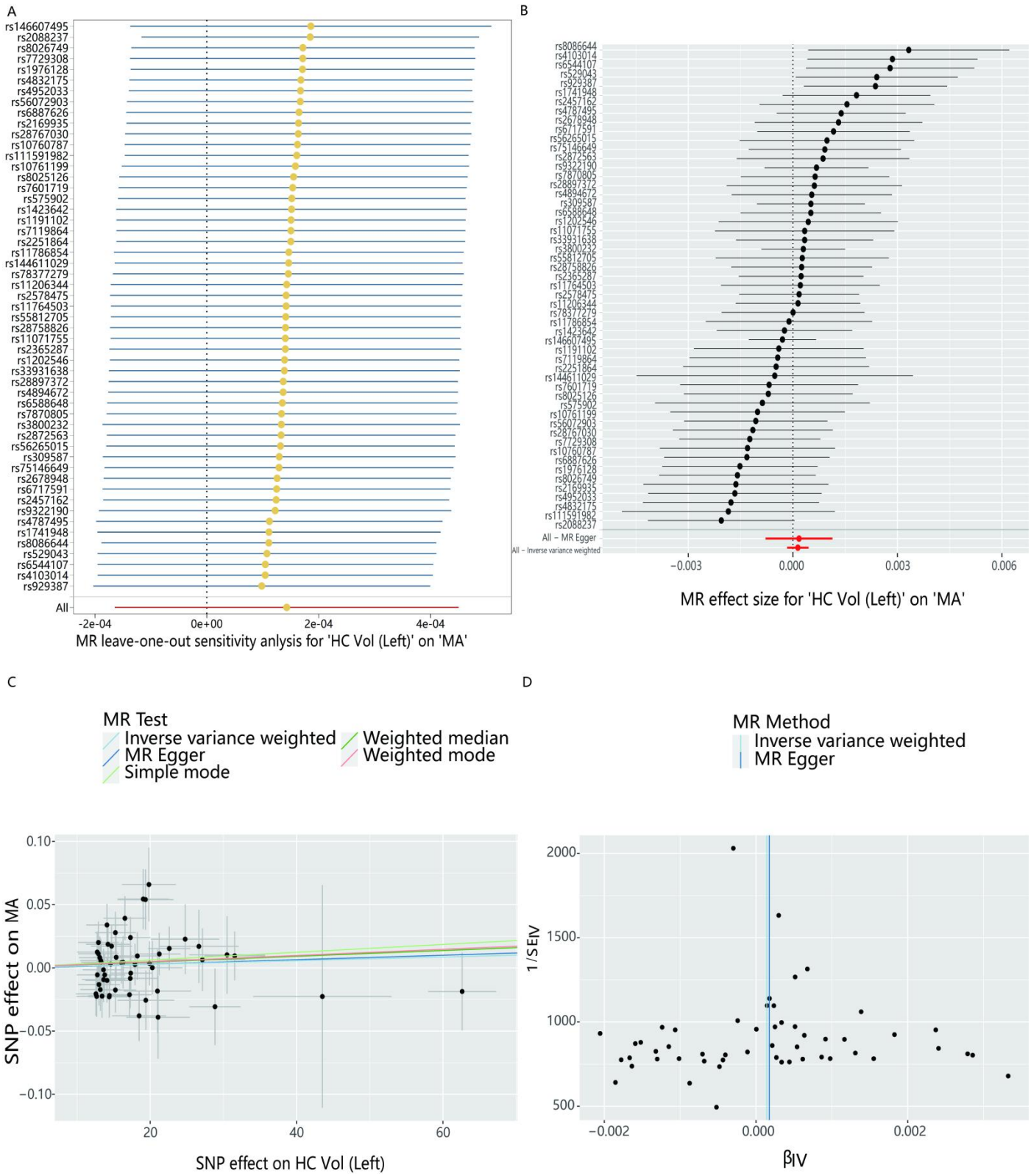


Fig. S126 The causal effect of Left hippocampal volume on migraine with aura. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

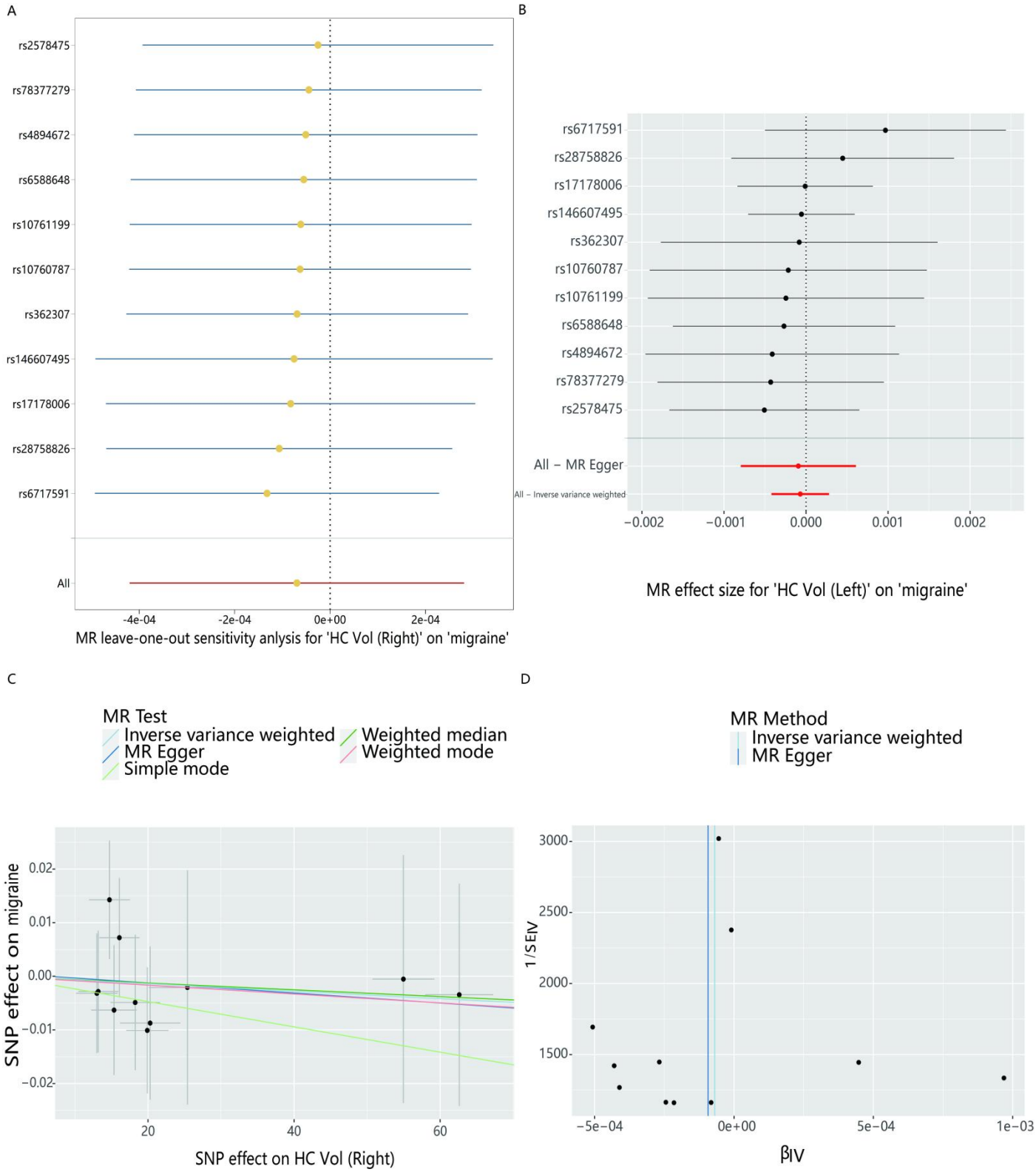


Fig. S127 The causal effect of Righthippocampal volume on migraine. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

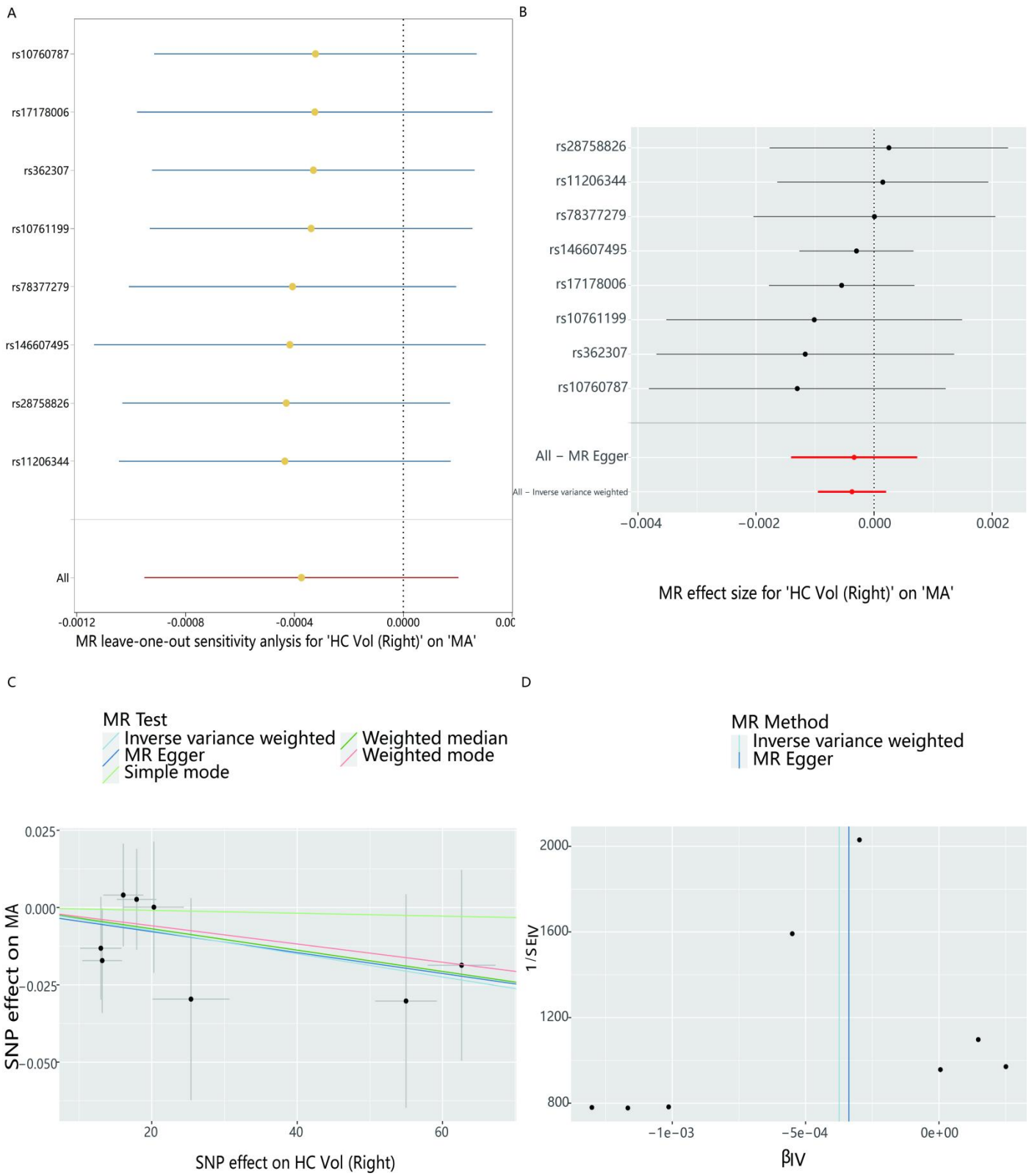


Fig. S128 The causal effect of Right hippocampal volume on migraine with aura. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

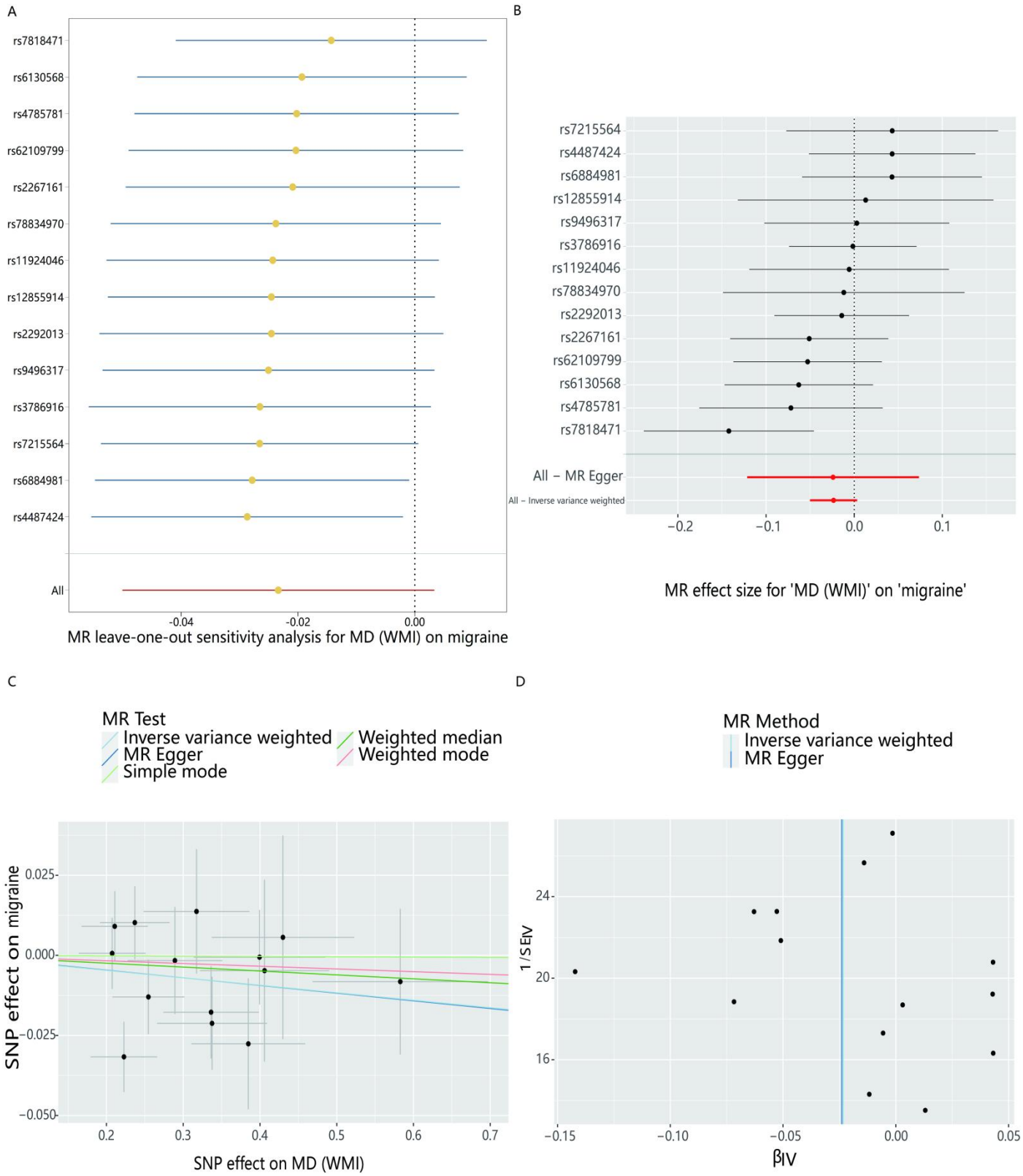


Fig. S129 The causal effect of mean diffusivity of White matter integrity on migraine. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

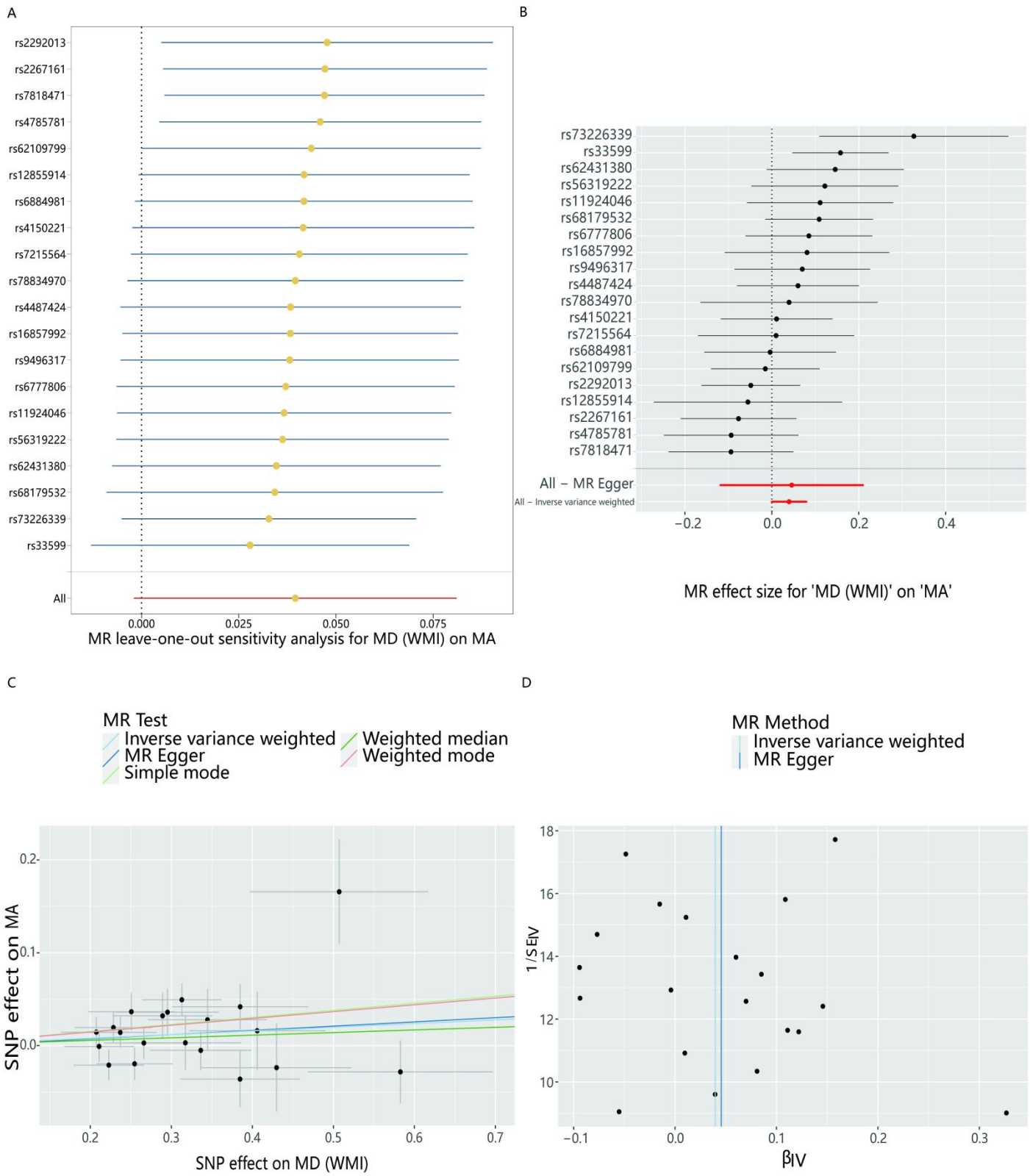


Fig. S130 The causal effect of mean diffusivity of White matter integrity on migraine with aura. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

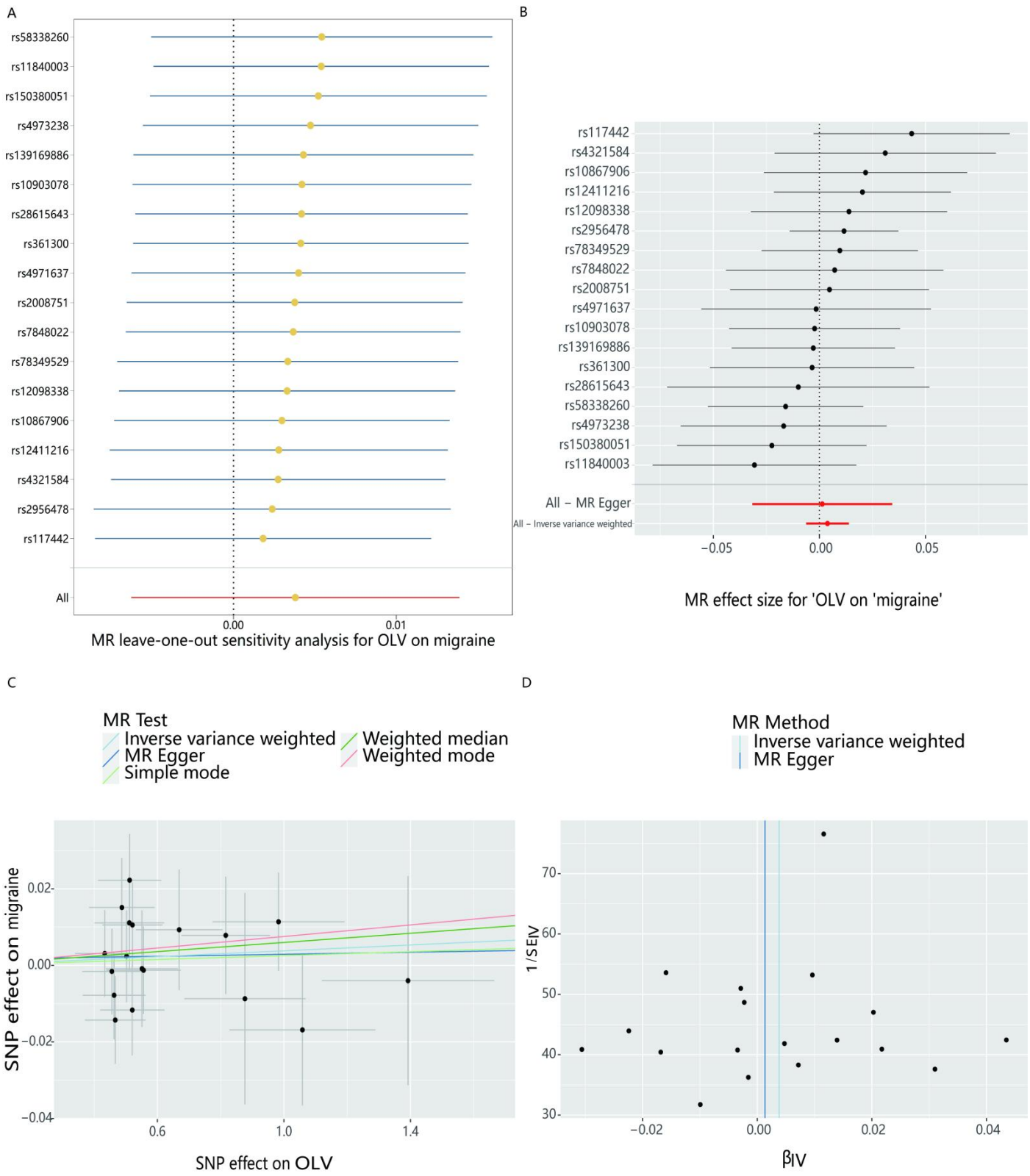


Fig. S131 The causal effect of Occipital lobe volume measurement on migraine. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

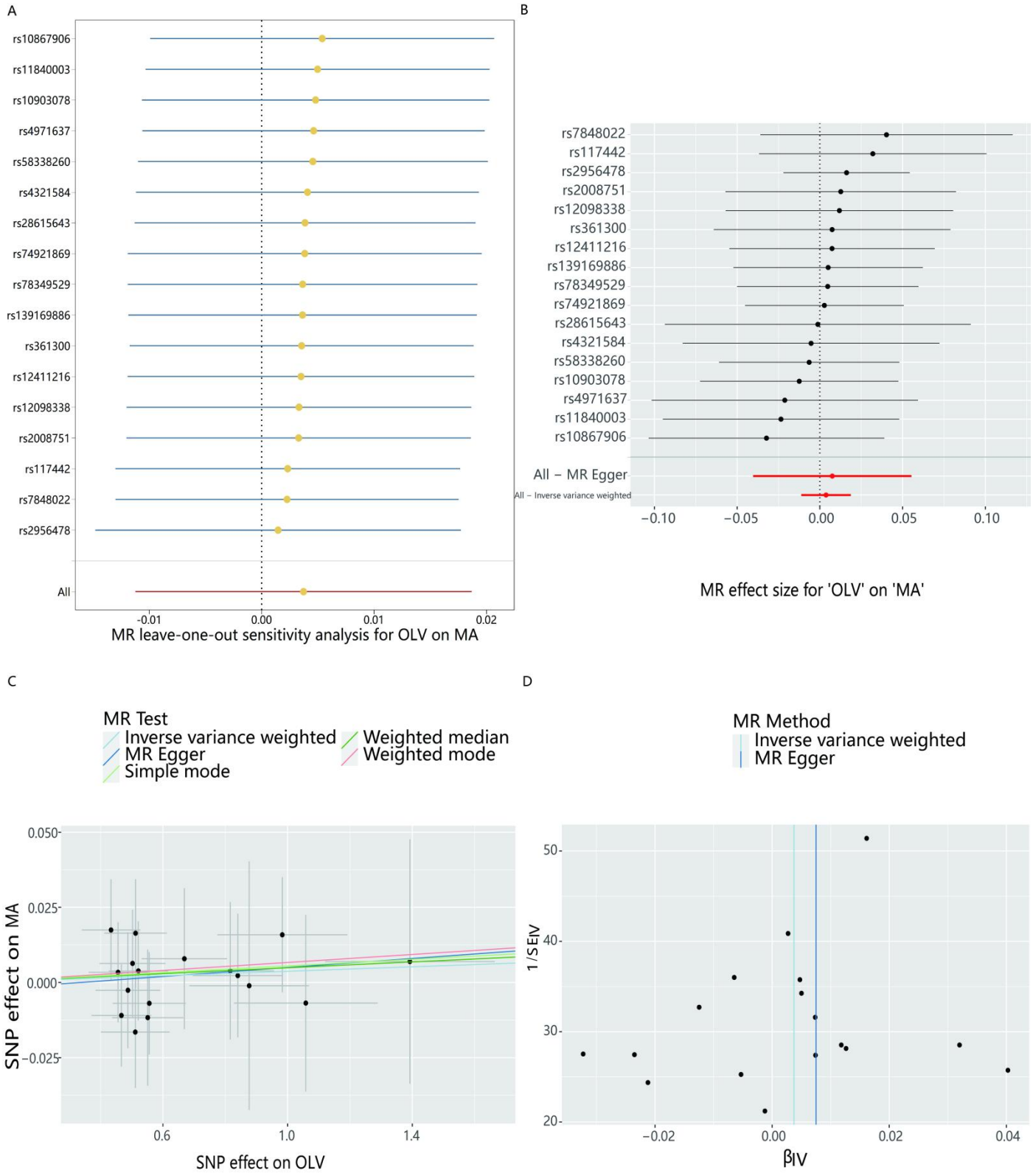


Fig. S132 The causal effect of Occipital lobe volume measurement on migraine with aura. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

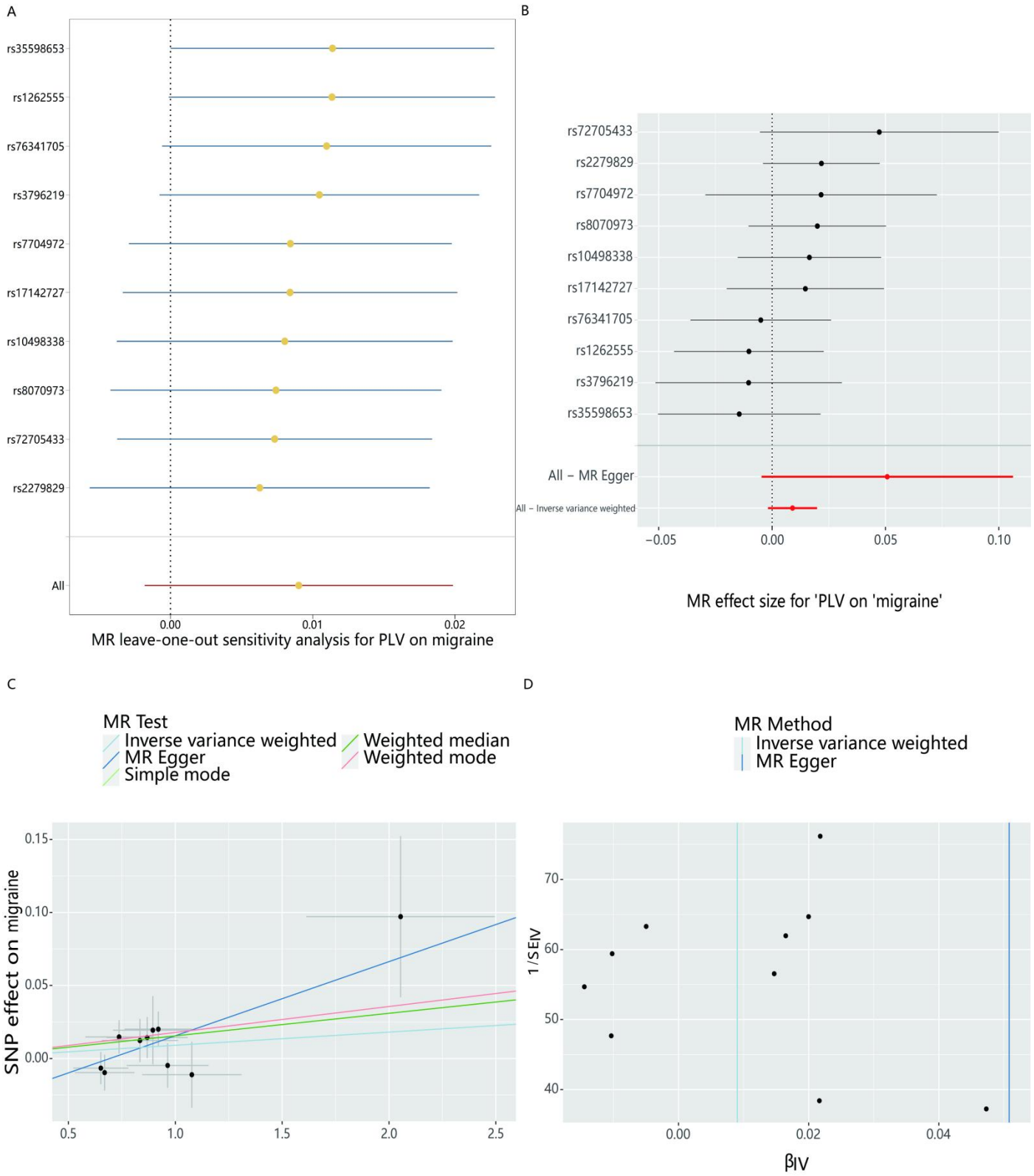


Fig. S133 The causal effect of Parietal lobe volume measurement on migraine. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

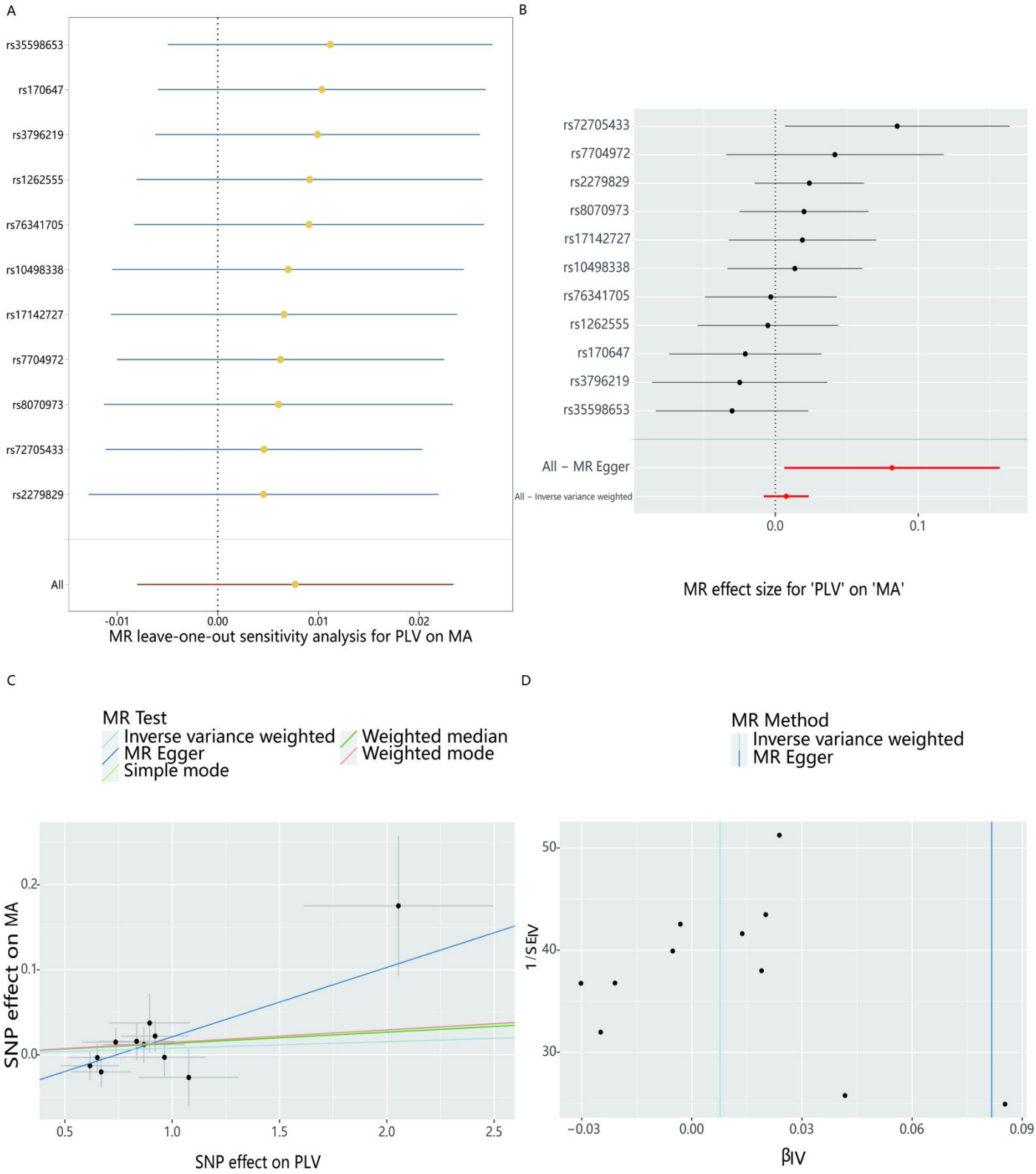


Fig. S134 The causal effect of Parietal lobe volume measurement on migraine with aura. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

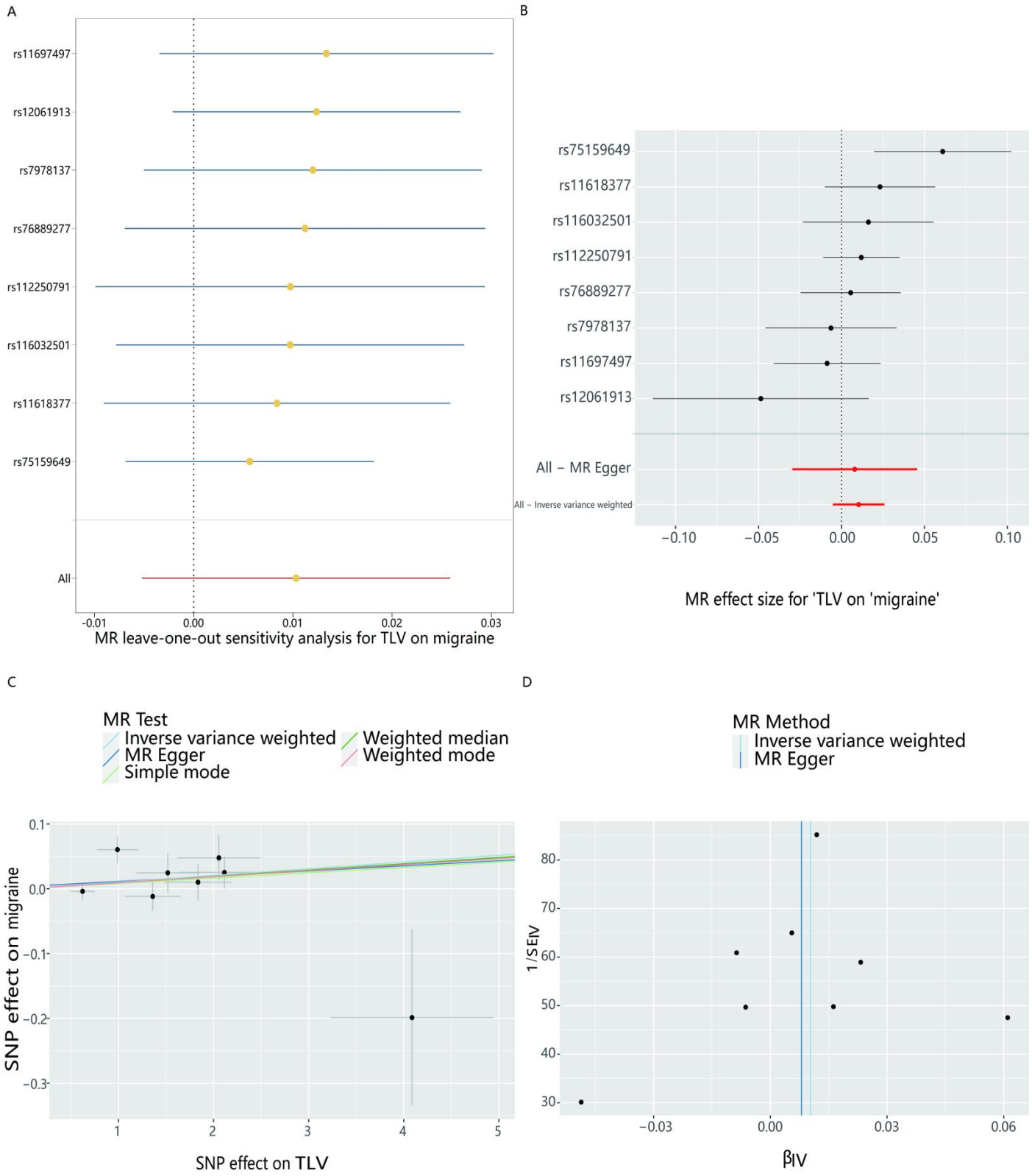


Fig. S135 The causal effect of Temporal lobe volume measurement on migraine. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

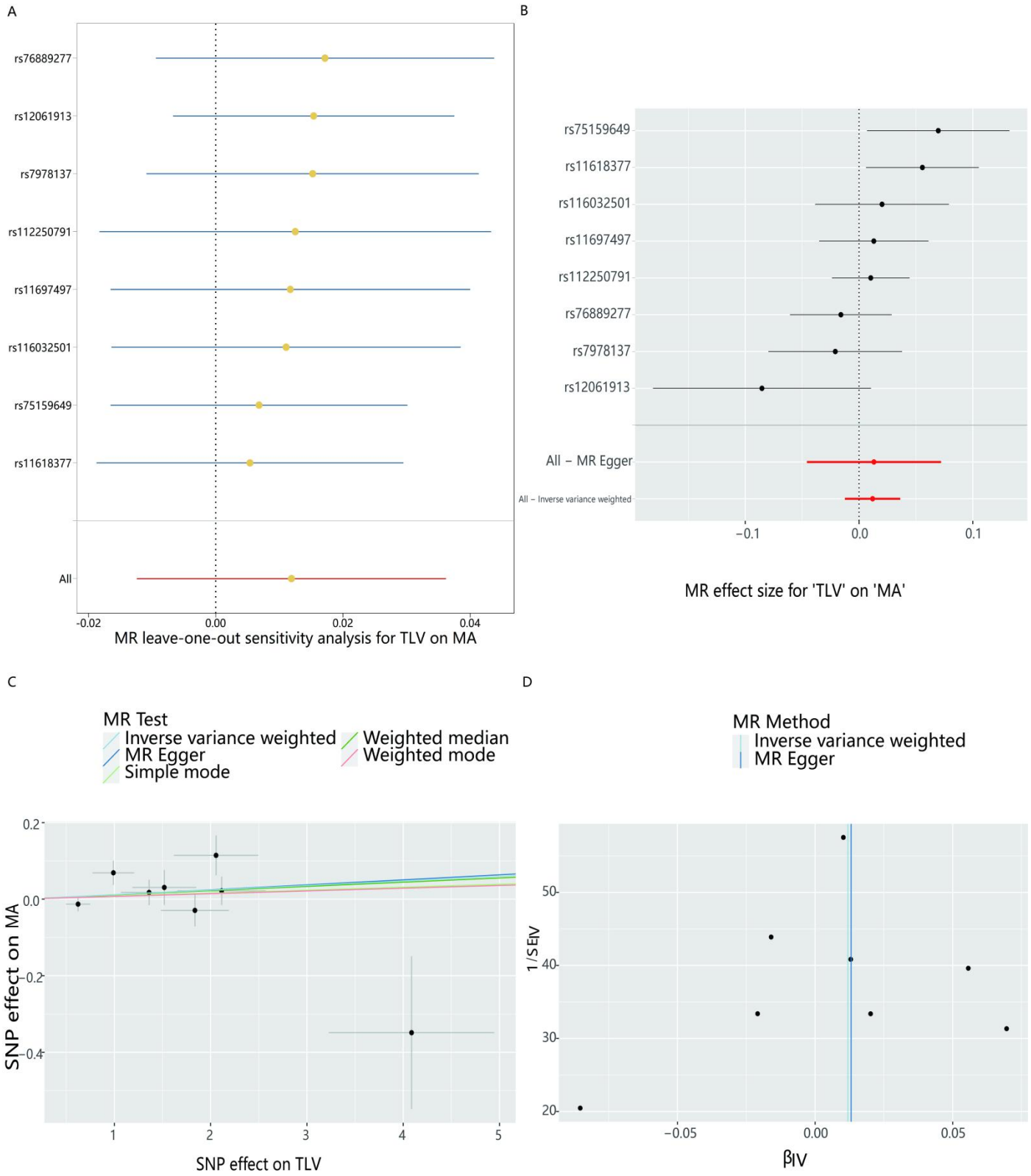


Fig. S136 The causal effect of Temporal lobe volume measurement on migraine with aura. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

B

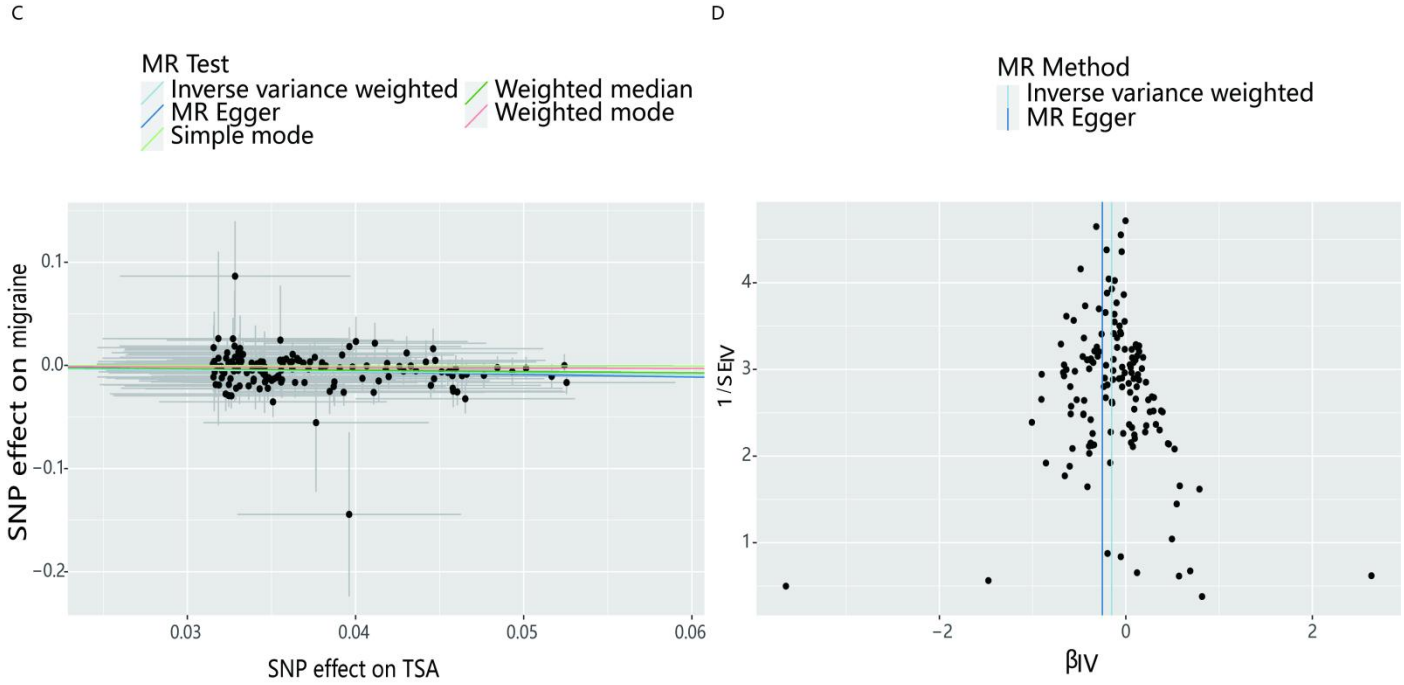


Fig. S137 The causal effect of Total surface area measurement on migraine. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

B

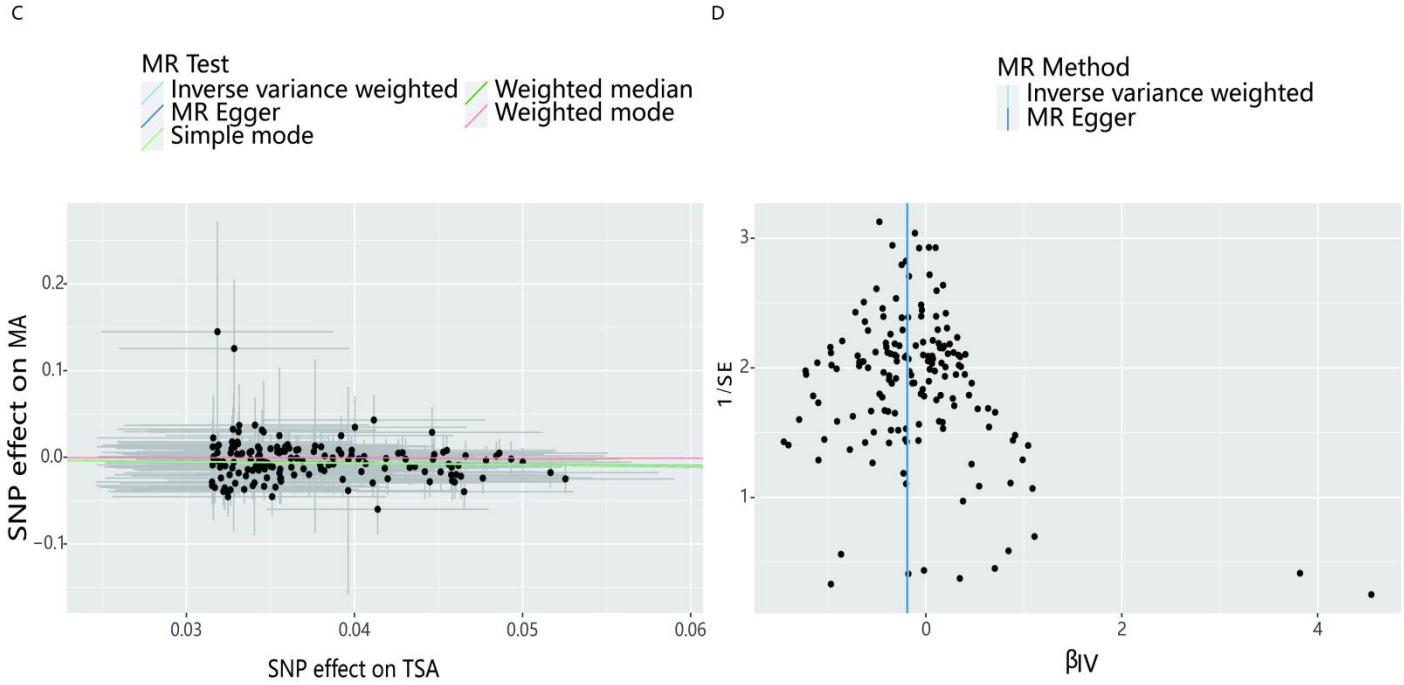


Fig. S138 The causal effect of Total surface area measurement on migraine with aura. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

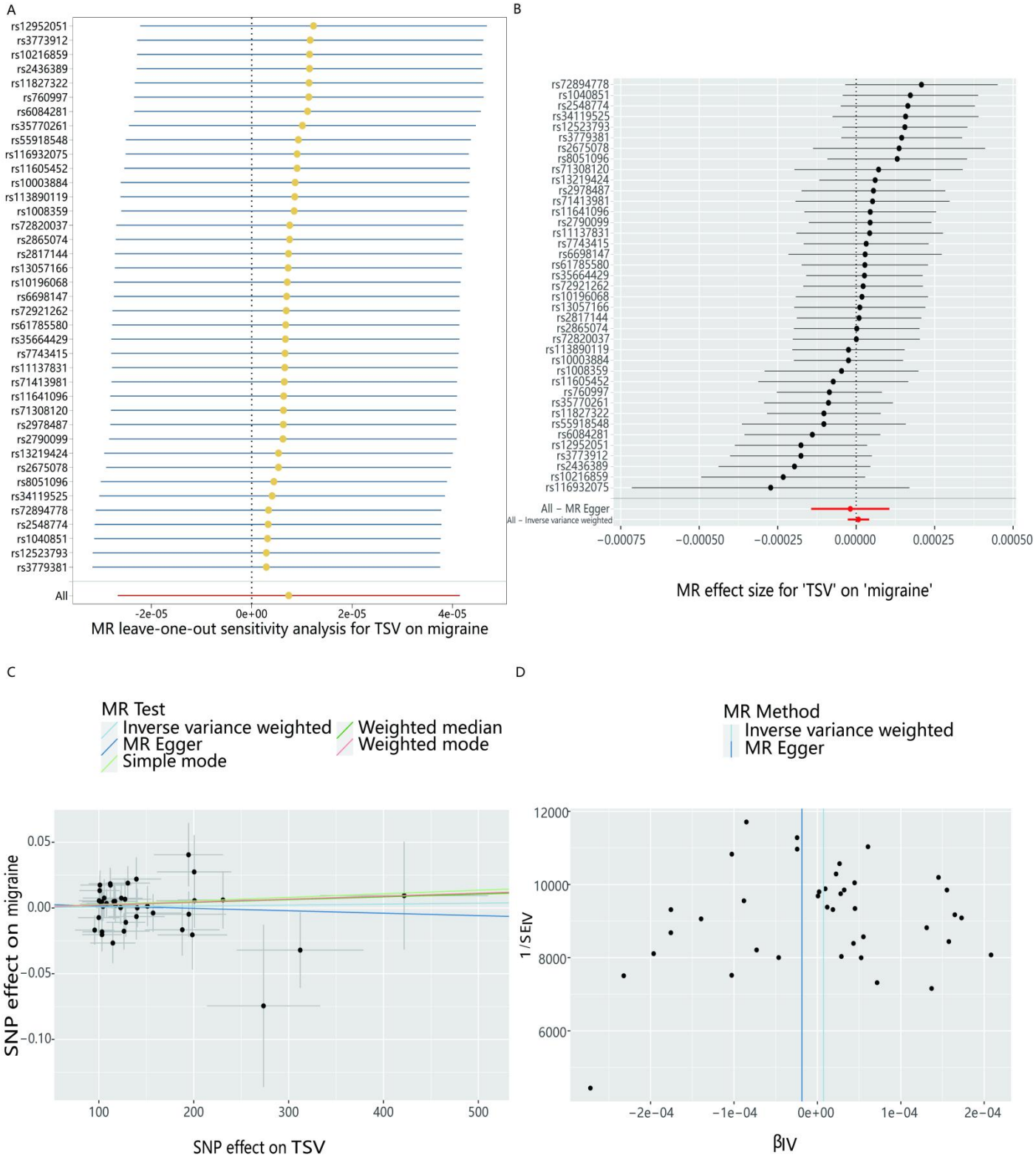


Fig. S139 The causal effect of Total subcortical volume on migraine. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

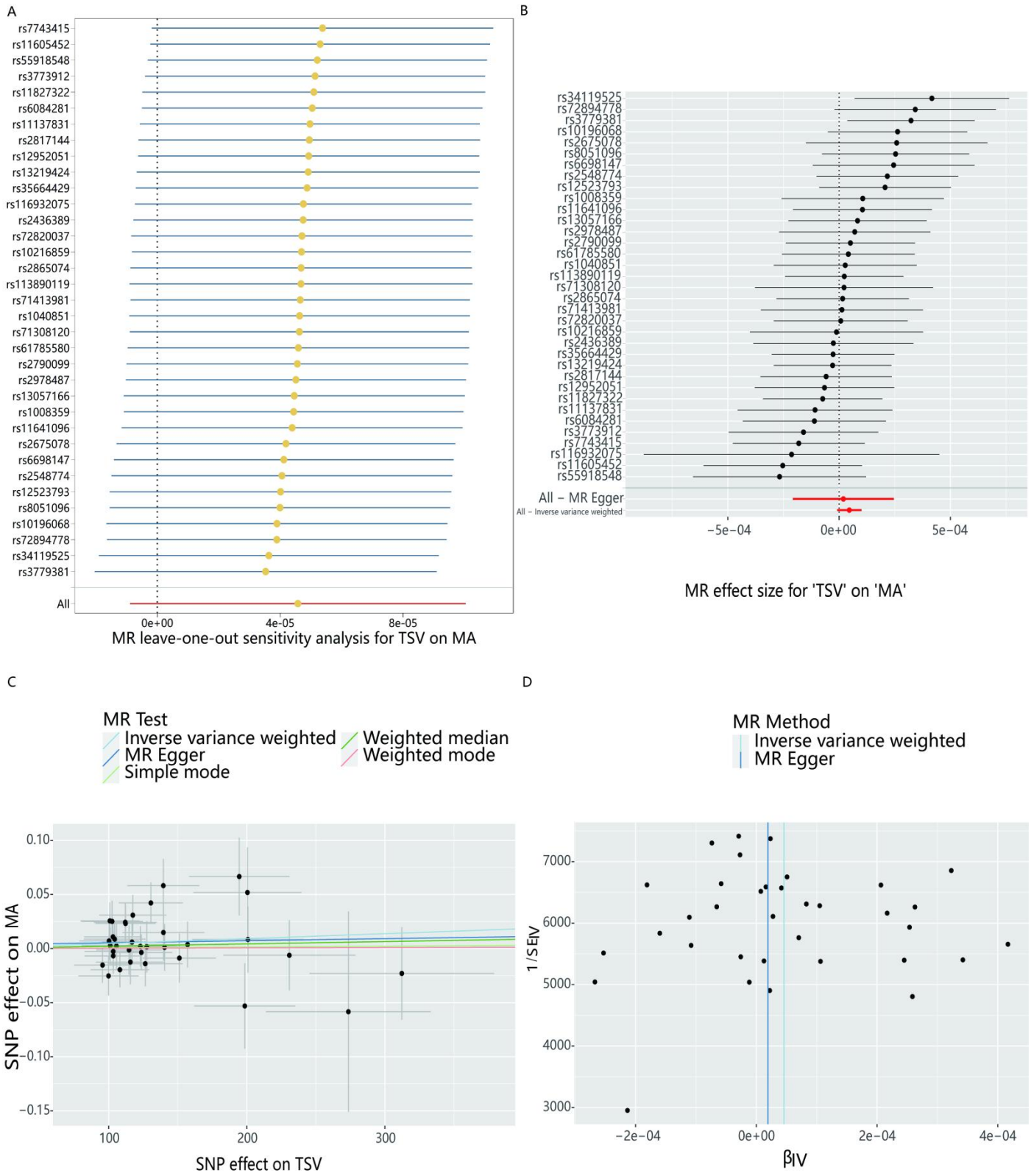


Fig. S140 The causal effect of Total subcortical volume on migraine with aura. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

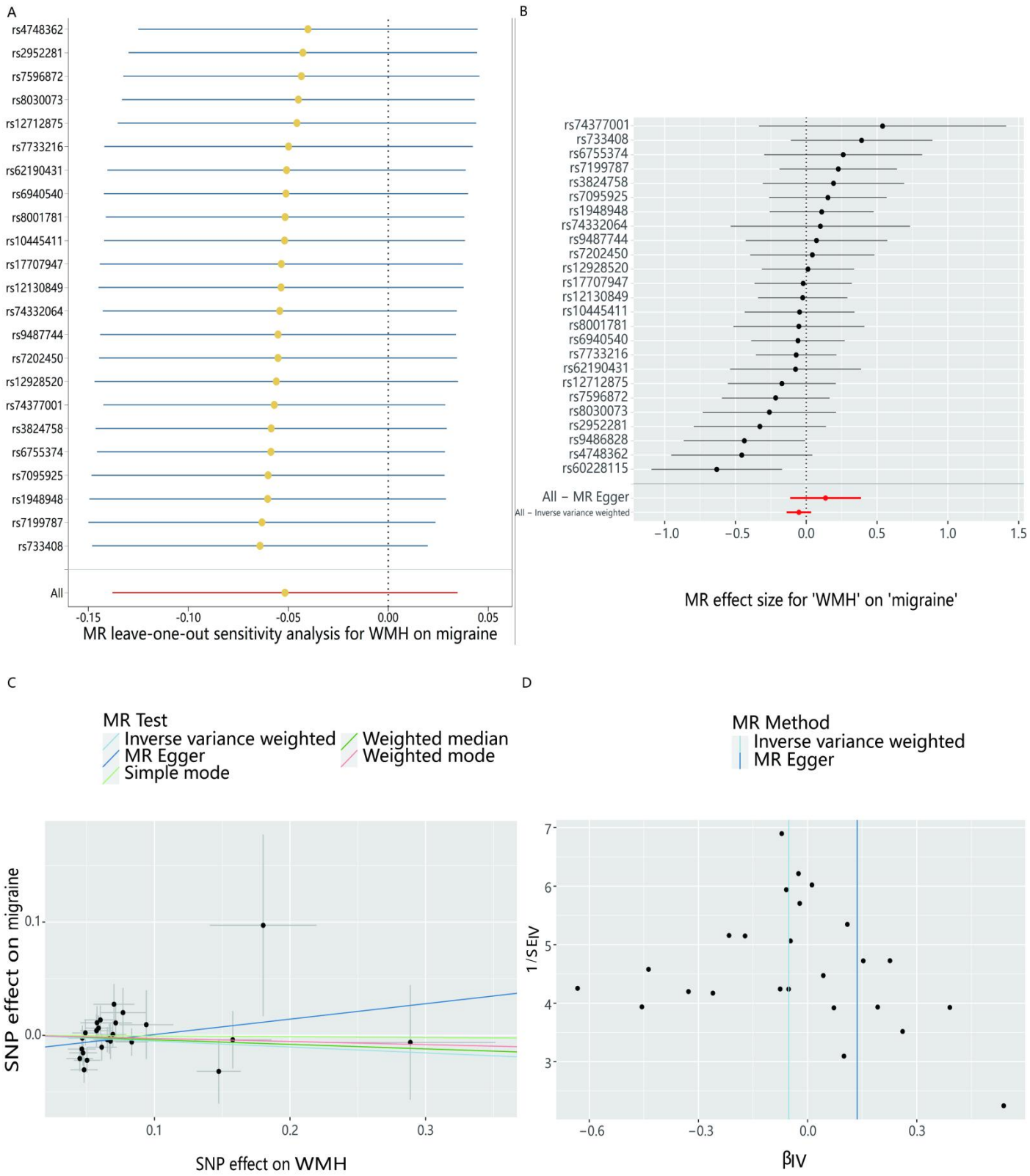


Fig. S141 The causal effect of White matter hyperintensity measurement on migraine. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.

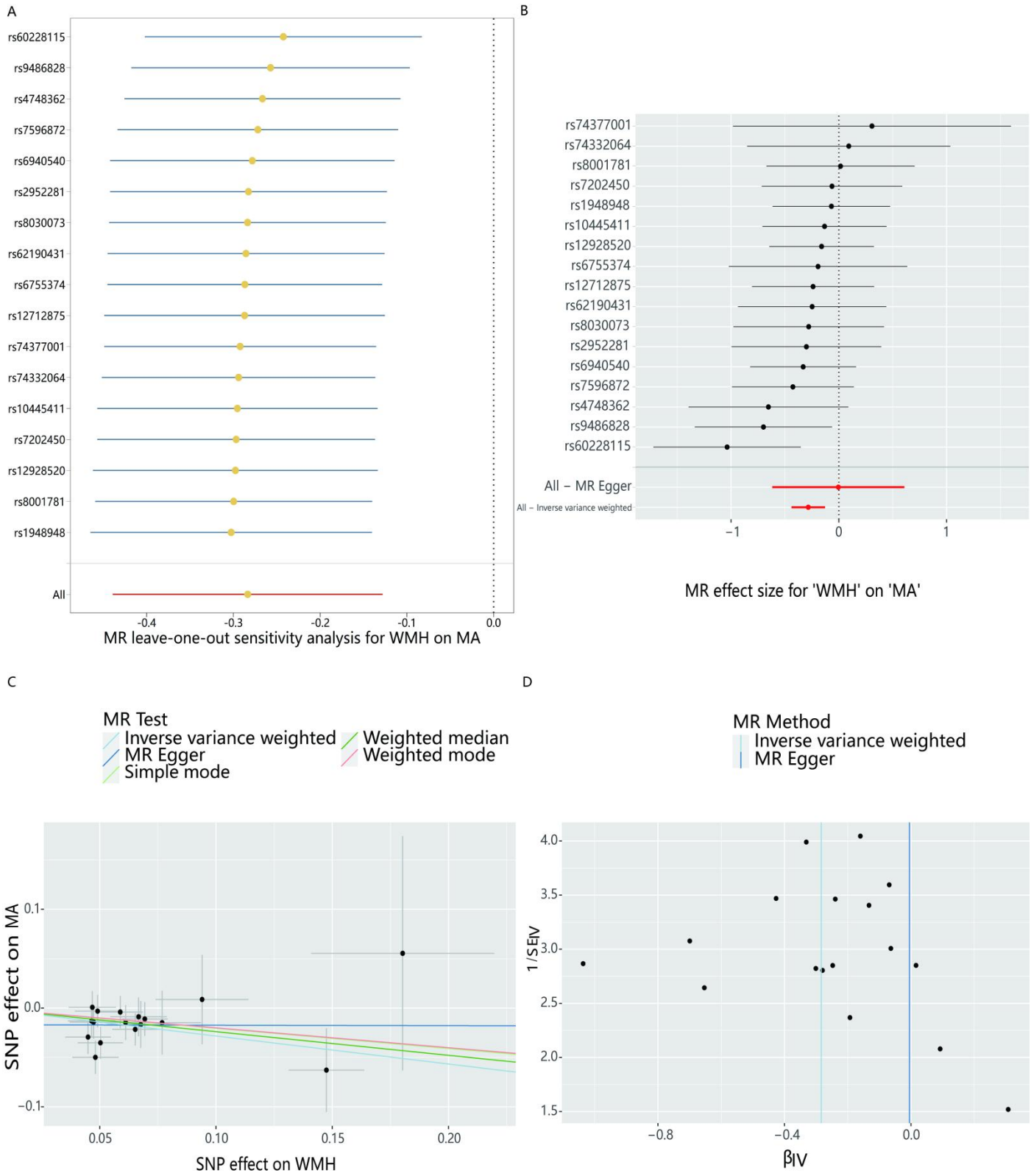


Fig. S142 The causal effect of White matter hyperintensity measurement on migraine with aura. (A) leave-one-out, (B) Forest plot, (C) Scatter plot, (D) Funnel plot.