Supplementary

Table S1 Information of GWAS datasets

Phenotypes	Consortium	Recruited year	Population	Sample size		Download site
				Cases	Controls	
Hypertension	GWAS Catalog	2021	European	129,909	354,689	https://www.ebi.ac.uk/gwas/studies/GCST90038604
Gastric cancer	GWAS Catalog	2021	European	1,029	475,087	https://www.ebi.ac.uk/gwas/studies/GCST90018849
Gastric cancer	FinnGen	2023	European	1,741	345,118	https://r11.finngen.fi/pheno/C3_STOMACH_EXALLC
Gastric cancer	GWAS Catalog	2021	East Asian	7,921	159,201	https://www.ebi.ac.uk/gwas/studies/GCST90018629
Colorectal cancer	GWAS Catalog	2021	European	6,581	463,421	https://www.ebi.ac.uk/gwas/studies/GCST90018808
Colorectal cancer	FinnGen	2023	European	8,801	345,118	https://r11.finngen.fi/pheno/C3_COLORECTAL_EXALLC
Colorectal cancer	GWAS Catalog	2021	East Asian	8,305	159,386	https://www.ebi.ac.uk/gwas/studies/GCST90018588
Breast cancer	IEU OpenGWAS project	2017	European	122,977	105,974	https://gwas.mrcieu.ac.uk/datasets/ieu-a-1126/
Ovarian cancer	IEU OpenGWAS project	2017	European	25,509	40,941	https://gwas.mrcieu.ac.uk/datasets/ieu-a-1120/
Lung cancer	IEU OpenGWAS project	2017	European	29,863	55,586	https://gwas.mrcieu.ac.uk/datasets/ieu-a-987/
Bladder cancer	IEU OpenGWAS project	2021	European	1,279	372,016	https://gwas.mrcieu.ac.uk/datasets/ieu-b-4874/
Cervical cancer	IEU OpenGWAS project	2018	European	1,889	461,044	https://gwas.mrcieu.ac.uk/datasets/ukb-b-8777/
Kidney cancer	IEU OpenGWAS project	2018	European	1,114	461,896	https://gwas.mrcieu.ac.uk/datasets/ukb-b-1316/
Prostate cancer	GWAS Catalog	2018	European	79,148	61,106	https://www.ebi.ac.uk/gwas/studies/GCST006085
Skin cancer	GWAS Catalog	2021	European	25,928	466,275	https://www.ebi.ac.uk/gwas/studies/GCST90018921
Endometrial cancer	GWAS Catalog	2018	European	12,906	108,979	https://www.ebi.ac.uk/gwas/studies/GCST006464
Lymphoma	GWAS Catalog	2021	European	3,546	487,257	https://www.ebi.ac.uk/gwas/studies/GCST90018878
Pancreatic cancer	GWAS Catalog	2021	European	1,196	475,049	https://www.ebi.ac.uk/gwas/studies/GCST90018893
Esophageal cancer	GWAS Catalog	2021	European	998	475,308	https://www.ebi.ac.uk/gwas/studies/GCST90018841
Thyroid cancer	FinnGen	2023	European	2,311	345,118	https://r11.finngen.fi/pheno/C3_THYROID_GLAND_EXALLC
Brain cancer	FinnGen	2023	European	1,070	345,118	https://r11.finngen.fi/pheno/C3_BRAIN_EXALLC
Liver cancer	FinnGen	2023	European	609	345,118	https://r11.finngen.fi/pheno/C3_HEPATOCELLU_CARC_EXALLC
ACEI/ARB	GWAS Catalog	2021	European	62,752	174,778	https://www.ebi.ac.uk/gwas/studies/GCST90018988
Beta-blockers	GWAS Catalog	2021	European	31,700	192,324	https://www.ebi.ac.uk/gwas/studies/GCST90018986
CCB	GWAS Catalog	2021	European	31,904	172,474	https://www.ebi.ac.uk/gwas/studies/GCST90018987
Diuretics	GWAS Catalog	2021	European	34,453	194,633	https://www.ebi.ac.uk/gwas/studies/GCST90018985
Alpha-blockers	GWAS Catalog	2021	European	5,111	315,647	https://www.ebi.ac.uk/gwas/studies/GCST90078093

GWAS, genome-wide association study; IEU, Integrative Epidemiology Unit; ACEI/ARB, angiotensin-converting enzyme inhibitor/angiotensin receptor blocker; CCB, calcium channel blocker.

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Table S2 Detailed information on the SNPs selected as IVs associated with hypertension

SNP	EA	OA	EAF	P	R^2	F-statistic
rs56153133	A	G	0.84	1.18E-55	5.09E−04	246.98
rs848309	T	C	0.42	3.09E−09	7.25E−05	35.12
rs193084249	A	G	0.98	2.21E−09	7.38E−05	35.78
rs57778433	G	A	0.92	4.07E−10	8.06E−05	39.08
rs7515635	T	C	0.46	6.31E−09	6.96E−05	33.74
rs12142296	T	G	0.87	1.44E−09	7.56E−05	36.62
rs778124	G	A	0.62	1.50E−09	7.54E−05	36.54
rs12035750	T	C	0.63	9.84E−10	7.71E−05	37.36
rs10776752	G	T	0.93	8.24E−32	2.84E−04	137.76
rs146718647	C	T	0.98	3.40E−20	1.75E−04	84.74
rs35479618	G	A	0.98	1.20E−16	1.42E−04	68.60
rs68085857	C	T	0.77	1.36E−10	8.51E−05	41.22
rs943580	G	A	0.41	2.72E−21	1.85E−04	89.74
rs4335411	G	A	0.23	1.10E−09	7.66E−05	37.14
rs1275988	C	T	0.40	1.51E-60	5.56E−04	269.43
rs3764769	C	T	0.74	8.56E−13	1.06E−04	51.15
rs11125883	A	C	0.64	5.72E−11	8.86E−05	42.92
rs11677903	C	T	0.79	8.18E−08	5.94E−05	28.76
rs11688682	G	C	0.73	8.76E−12	9.61E−05	46.59
rs268263	T	A	0.26	8.13E−19	1.62E−04	78.47
rs6753693	A	G	0.44	2.80E−08	6.36E−05	30.84
rs1047891	C	A	0.68	4.37E−10	8.04E−05	38.94
rs2972147	T	C	0.35	2.52E−09	7.33E−05	35.52
rs6768611	G	A	0.33	2.65E−18	1.57E−04	76.14
rs2643826	C	T	0.54	3.34E−34	3.07E−04	148.69
rs6800730	A	G	0.34	9.30E−23	1.99E−04	96.42
rs116511141	G	A	0.97	7.56E−09	6.89E−05	33.38
rs6445817	C	A	0.67	4.58E−11	8.94E−05	43.35
rs4682671	T	G	0.41	2.25E−15	1.30E−04	62.83
rs2293252	C	T	0.35	1.01E−09	7.70E−05	37.30
rs62271373	T	A	0.94	1.09E−13	1.14E−04	55.20
rs6441207	C	T	0.59	4.86E−09	7.07E−05	34.24
rs55735727	A	T	0.73	1.30E−08	6.67E−05	32.33
rs57158761	A	G	0.56	4.75E−10	8.00E−05	38.78
rs1290933	C	A	0.32	1.86E−11	9.31E−05	45.12
rs58854324	T	C	0.83	4.52E−09	7.10E−05	34.39
rs28667801	A	T	0.59	7.03E−17	1.44E−04	69.67
rs5020545	C	T	0.56	5.16E−10	7.97E−05	38.62
rs12509595	T	C	0.71	5.55E−123	1.15E−03	556.23
rs35895091	A	G	0.30	1.03E−08	6.77E−05	32.79
rs13107325	C	T	0.93	6.12E−35	3.14E−04	152.07
rs9330353	T	A	0.57	1.46E−14	1.22E−04	59.16
rs893929	G	A	0.55	3.47E−12	9.99E−05	48.41
rs990619	C	G	0.48	2.52E−13	1.10E−04	53.55
rs72689147	G	T	0.82	3.38E−20	1.75E−04	84.75
rs28730491	G	C	0.66	2.49E−08	6.41E−05	31.07
rs2455357	A	G	0.29	1.74E−11	9.34E−05	45.25
rs10059884	C	A	0.40	3.55E-53	4.86E−04	235.62
rs702634	G	A	0.30	2.20E−11	9.24E−05	44.78
rs3936511	A	G	0.81	1.52E−12	1.03E−04	50.02
rs27687	T	C	0.73	1.37E−11	9.43E−05	45.71
rs1422278	G	T	0.86	6.13E−14	1.16E−04	56.33
rs17677603	A	G	0.60	1.41E−17	1.50E−04	72.84
rs72801474	G	A	0.91	2.13E−10	8.32E−05	40.34
rs13358657	A	G	0.87	5.96E−14	1.16E−04	56.38
rs2569882	T	C	0.56	1.45E−10	8.48E−05	41.09
rs72838866	A	G	0.87	9.64E−14	1.14E−04	55.44
rs198851	T	G	0.15	1.45E−26	2.35E−04	113.79
rs2071286	C	T	0.82	1.28E−20	1.79E−04	86.68
rs9268671	A	G	0.34	5.86E−13	1.07E−04	51.89
rs7763350	A	C	0.67	1.39E−19	1.69E−04	81.96
rs6905288	G	A	0.43	1.02E−10	8.62E−05	41.78
rs10943595	C	G	0.63	9.13E−13	1.05E−04	51.02
rs1361831	T	C	0.57	8.18E-48	4.35E−04	211.03
rs2105092	G	A	0.70	1.27E−15	1.32E−04	63.96
rs57139556	A	G	0.92	4.36E−33	2.96E−04	143.59
rs11771259	C	G	0.88	4.16E−14	1.18E−04	57.09
rs60772526	C	T	0.08	2.42E−31	2.80E−04	135.61
rs6961048	C	G	0.90	1.57E−16	1.40E−04	68.08
rs740047	C	T	0.20	2.07E−12	1.02E−04	49.41
rs62481856	G	A	0.80	2.83E−22	1.94E−04	94.21
rs972283	A	G	0.48	2.78E−19	1.66E−04	80.59
rs3918226	C	T	0.92	4.64E-62	5.70E−04	276.37
rs10224210	T	C	0.73	1.49E−19	1.69E−04	81.82
rs7838131	G	A	0.44	3.19E−13	1.10E−04	53.09
rs951914	G	C	0.29	5.66E−21	1.82E−04	88.29
rs11776122	A	G	0.80	1.09E−08	6.74E−05	32.68
rs11990607	A	G	0.83	1.31E−09	7.59E−05	36.80
rs35783704	G	A	0.90	6.13E−15	1.26E−04	60.86
rs12114418	A	G	0.76	6.48E−10	7.88E−05	38.17
rs7841408	A	G	0.65	6.60E−12	9.73E−05	47.14
rs28394055	C	T	0.47	2.94E−13	1.10E−04	53.25
rs1048070	T	C	0.47	1.76E−08	6.55E−05	31.75
rs76452347	C	T	0.80	3.26E−23	2.03E−04	98.50
rs9411377	C	A	0.70	1.09E−15	1.33E−04	64.26
rs6271	C	T	0.93	3.69E−15	1.28E−04	61.86
rs7911644	C	T	0.66	2.26E−20	1.76E−04	85.55
rs12258967	C	G	0.70	2.80E−38	3.45E−04	167.35
rs72831343	T	G	0.86	1.96E-66	6.11E−04	296.44
rs2236295	G	T	0.61	4.57E−18	1.55E−04	75.06
rs57866767	T	C	0.56	1.36E−32	2.92E−04	141.34
rs10883543	G	T	0.11	1.77E−15	1.31E−04	63.30
rs11191559	C	T	0.92	5.31E−38	3.43E−04	166.08
rs1801253	G	C	0.27	8.65E−38	3.41E−04	165.11
rs17099139	C	G	0.73	1.86E−09	7.45E−05	36.11
rs4752518	C	T	0.80	6.77E−13	1.06E−04	51.61
rs569550	T	G	0.61	3.00E-42	3.83E−04	185.54
rs360153	T	C	0.42	5.28E−22	1.92E−04	92.98
rs10832586	A	C	0.80	3.24E−26	2.31E−04	112.19
rs3809060	G	T	0.61	3.17E−10	8.16E−05	39.57
rs7125196	T	C	0.88	7.22E−15	1.25E−04	60.54
rs11231711	G	A	0.94	1.06E−08	6.75E−05	32.72
rs2306363	G	T	0.80	4.04E−17	1.46E−04	70.76
rs604723	T	C	0.28	2.31E-51	4.69E−04	227.31
rs3867466	A	C	0.72	1.70E−16	1.40E−04	67.92
rs1241658	G	A	0.11	1.44E−09	7.56E−05	36.62
rs66561220	T	C	0.72	3.04E−15	1.28E−04	62.24
rs2078339	A	G	0.72	2.76E−18	1.57E−04	76.05
rs73099903	C	T	0.92	2.22E−10	8.31E−05	40.26
rs2681492	T	C	0.82	1.44E-41	3.76E−04	182.41
rs11112548	A	T	0.96	4.20E−08	6.20E−05	30.06
rs7310615	C	G	0.46	5.19E-55	5.03E−04	244.03
rs35444	A	G	0.62	2.91E−35	3.17E−04	153.55
rs36174733	A	G	0.82	9.29E−10	7.73E−05	37.47
rs9506725	T	C	0.64	9.96E−16	1.33E−04	64.44
rs3803266	G	C	0.25	4.82E−17	1.45E−04	70.41
rs112684153	T	C	0.93	3.61E−09	7.19E−05	34.82
rs112035922	C	T	0.76	1.25E−10	8.54E−05	41.38
rs696	C	T	0.63	2.06E−11	9.27E−05	44.91
rs72683923	T	C	0.98	3.37E−10	8.14E−05	39.45
rs57786342	G	A	0.80	2.22E−09	7.38E−05	35.77
rs3759582	A	C	0.87	1.19E−09	7.63E−05	36.98
rs12911761	C	T	0.58	9.60E−09	6.79E−05	32.92
rs11072508	C	T	0.35	6.15E-42	3.80E−04	184.11
rs12906125	G	A	0.68	6.04E-46	4.18E−04	202.47
rs12906962	T	C	0.67	9.54E−14	1.14E−04	55.46
rs28590346	A	T	0.65	2.85E−11	9.14E−05	44.28
rs10500326	G	T	0.76	7.11E−19	1.62E−04	78.73
rs77924615	G	A	0.81	1.29E−35	3.20E−04	155.16
rs7186298	C	T	0.57	1.16E−08	6.72E−05	32.56
rs7404754	C	T	0.43	7.67E−12	9.67E−05	46.85
rs34869093	A	G	0.63	2.85E−12	1.01E−04	48.79
rs61400540	G	A	0.67	3.02E−08	6.33E−05	30.69
rs2460448	G	A	0.56	3.77E−23	2.03E−04	98.21
rs74439044	T	C	0.90	3.16E−18	1.56E−04	75.79
rs1476810	C	T	0.53	8.06E−09	6.86E−05	33.26
rs145153053	A	G	0.84	4.02E−16	1.37E−04	66.23
rs17637472	G	A	0.61	7.23E−22	1.91E−04	92.36
rs3785837	G	A	0.25	1.91E−14	1.21E−04	58.62
rs4277405	C	T	0.37	2.47E−24	2.14E−04	103.60
rs6504213	T	C	0.40	1.47E−09	7.55E−05	36.57
rs1436138	A	G	0.63	7.85E−18	1.53E−04	73.99
rs8073626	C	T	0.48	1.60E−09	7.51E−05	36.41
rs7232858	T	C	0.81	1.36E−10	8.50E−05	41.21
rs10164193	T	G	0.92	2.11E−09	7.40E−05	35.87
rs8093196	G	T	0.33	1.53E−14	1.22E−04	59.06
rs72915163	C	T	0.74	8.69E−16	1.34E−04	64.71
rs117777118	G	A	0.96	2.09E−07	5.56E−05	26.95
rs12609484	G	T	0.69	2.68E−09	7.30E−05	35.40
rs12978472	C	G	0.87	1.31E-61	5.66E−04	274.30
rs12463045	T	C	0.18	1.54E−12	1.03E−04	50.00
rs10409243	C	T	0.41	9.08E−11	8.67E−05	42.01
rs4805881	A	C	0.34	1.23E−11	9.47E−05	45.92
rs1065853	G	T	0.92	4.43E−14	1.18E−04	56.97
rs681343	C	T	0.50	1.68E−13	1.12E−04	54.35
rs1741288	G	A	0.36	3.14E−08	6.32E−05	30.62
rs6108168	C	A	0.74	5.93E−32	2.86E−04	138.41
rs6108676	C	A	0.63	5.29E−10	7.96E−05	38.57
rs1887320	G	A	0.52	2.82E−39	3.55E−04	171.92
rs79384779	C	T	0.85	4.52E−11	8.95E−05	43.38
rs6031431	A	G	0.54	2.07E−14	1.21E−04	58.46
rs1923031	T	C	0.39	2.88E−16	1.38E−04	66.88
rs2823139	G	A	0.66	6.31E−12	9.75E−05	47.23
rs2298359	T	C	0.94	2.95E−12	1.01E−04	48.72
rs79094191	T	C	0.96	1.23E−15	1.32E−04	64.02
rs3208800	G	T	0.48	1.91E−10	8.37E−05	40.56

SNP, single nucleotide polymorphism; EA, effect allele; OA, other alleles; EAF, effect allele frequency; P, P value for the association between SNPs and exposure; R^2, a measure of linkage disequilibrium.

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Table S3 Number of SNPs retained after each selection step for MR

Exposure	Outcome	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
Hypertension	Gastric cancer	37,165	269	269	167	163	163
Hypertension	Colorectal cancer	37,165	269	269	167	163	161
Hypertension	Esophageal cancer	37,165	269	269	167	163	163
Hypertension	Breast cancer	37,165	269	269	167	157	148
Hypertension	Ovarian cancer	37,165	269	269	167	157	154
Hypertension	Lung cancer	37,165	269	269	167	153	145
Hypertension	Bladder cancer	37,165	269	269	167	147	147
Hypertension	Cervical cancer	37,165	269	269	167	109	109
Hypertension	Kidney cancer	37,165	269	269	167	70	70
Hypertension	Prostate cancer	37,165	269	269	167	160	160
Hypertension	Skin cancer	37,165	269	269	167	163	160
Hypertension	Endometrial cancer	37,165	269	269	167	160	160
Hypertension	Lymphoma	37,165	269	269	167	163	162
Hypertension	Pancreatic cancer	37,165	269	269	167	163	163
Hypertension	Thyroid cancer	37,165	269	269	167	156	156
Hypertension	Brain cancer	37,165	269	269	167	156	156
Hypertension	Liver cancer	37,165	269	269	167	156	156
Gastric cancer	Hypertension	1,348	10	10	5	3	3
Colorectal cancer	Hypertension	1,312	30	30	29	26	26
Esophageal cancer	Hypertension	528	4	4	1	N/A	N/A
Breast cancer	Hypertension	17,295	140	140	102	99	88
Ovarian cancer	Hypertension	3,914	12	12	6	2	N/A
Lung cancer	Hypertension	668	6	6	4	3	3
Bladder cancer	Hypertension	5	2	2	2	N/A	N/A
Cervical cancer	Hypertension	183	1	1	N/A	N/A	N/A
Kidney cancer	Hypertension	0	N/A	N/A	N/A	N/A	N/A
Prostate cancer	Hypertension	19,381	137	137	91	90	77
Skin cancer	Hypertension	9,595	55	55	46	46	41
Endometrial cancer	Hypertension	418	16	16	14	13	13
Lymphoma	Hypertension	887	6	6	6	6	4
Pancreatic cancer	Hypertension	0	N/A	N/A	N/A	N/A	N/A
Thyroid cancer	Hypertension	1,123	13	13	7	7	7
Brain cancer	Hypertension	35	1	1	N/A	N/A	N/A
Liver cancer	Hypertension	0	N/A	N/A	N/A	N/A	N/A
ACEI/ARB	Gastric cancer	10,555	166	166	150	149	149
ACEI/ARB	Colorectal cancer	10,555	166	166	150	149	143
Beta-blockers	Gastric cancer	3,370	68	68	64	64	63
Beta-blockers	Colorectal cancer	3,370	68	68	64	64	62
CCB	Gastric cancer	6,855	109	109	99	99	96
CCB	Colorectal cancer	6,855	109	109	99	99	96
Diuretics	Gastric cancer	4,721	75	75	72	72	72
Diuretics	Colorectal cancer	4,721	75	75	72	72	72
Alpha-blockers	Gastric cancer	72	5	5	4	4	4
Alpha-blockers	Colorectal cancer	72	5	5	4	4	4

SNP, single nucleotide polymorphism; MR, Mendelian randomization; ACEI/ARB, angiotensin-converting enzyme inhibitor/angiotensin receptor blocker; CCB, calcium channel blocker; N/A , not applicable; Step 1, extracted SNPs associated with exposure ($P<5\times10^{-8}$); Step 2, clumping process ($r^2<0.001$, windows size =10,000 kb); Step 3, remove SNPs with an F-statistic <10; Step 4, remove SNPs associated with confounders and outcomes; Step 5, harmonization process; Step 6, Remove potential pleiotropic SNPs by MR-PRESSO method.

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Table S4 MR estimates for the association between hypertension and cancer risk

Outcome	SNPs	MR method	β	SE	OR (95%CI)	P
Gastric cancer	163	IVW	–0.486	0.201	0.615 (0.415, 0.912)	0.02
		MR Egger (slope test)	–0.185	0.525	0.831 (0.297, 2.324)	0.72
		Weighted median	–0.543	0.283	0.581 (0.334, 1.012)	0.06
		Weighted mode	–0.481	0.354	0.618 (0.309, 1.239)	0.18
		Simple mode	–0.163	0.604	0.850 (0.260, 2.774)	0.79
Colorectal cancer	161	IVW	–0.346	0.161	0.708 (0.516, 0.971)	0.03
		MR Egger (slope test)	–0.323	0.414	0.724 (0.321, 1.631)	0.44
		Weighted median	–0.237	0.224	0.789 (0.509, 1.224)	0.29
		Weighted mode	–0.106	0.360	0.899 (0.444, 1.823)	0.77
		Simple mode	–0.450	0.520	0.637 (0.230, 1.767)	0.39
Esophageal cancer	163	IVW	0.135	0.332	1.144 (0.597, 2.193)	0.69
		MR Egger (slope test)	–0.310	0.853	0.733 (0.138, 3.903)	0.72
		Weighted median	0.122	0.513	1.129 (0.413, 3.089)	0.81
		Weighted mode	0.031	0.754	1.031 (0.235, 4.521)	0.97
		Simple mode	0.518	1.104	1.678 (0.193, 14.603)	0.64
Breast cancer	148	IVW	–0.037	0.103	0.963 (0.787, 1.180)	0.72
		MR Egger (slope test)	0.321	0.257	1.378 (0.833, 2.280)	0.21
		Weighted median	0.018	0.122	1.019 (0.802, 1.293)	0.88
		Weighted mode	0.048	0.185	1.049 (0.730, 1.508)	0.80
		Simple mode	0.071	0.276	1.074 (0.625, 1.845)	0.80
Ovarian cancer	154	IVW	–0.087	0.163	0.917 (0.666, 1.263)	0.60
		MR Egger (slope test)	–0.696	0.410	0.499 (0.223, 1.114)	0.09
		Weighted median	–0.263	0.247	0.769 (0.474, 1.247)	0.29
		Weighted mode	–0.409	0.479	0.664 (0.260, 1.699)	0.40
		Simple mode	0.942	0.657	2.565 (0.707, 9.307)	0.15
Lung cancer	145	IVW	–0.116	0.154	0.851 (0.567, 1.279)	0.44
		MR Egger (slope test)	–0.743	0.390	0.733 (0.261, 2.058)	0.56
		Weighted median	0.130	0.219	1.156 (0.618, 2.161)	0.44
		Weighted mode	0.258	0.406	1.662 (0.463, 5.969)	0.44
		Simple mode	0.337	0.500	1.583 (0.341, 7.359)	0.56
Bladder cancer	147	IVW	0.002	0.002	1.002 (0.998, 1.005)	0.33
		MR Egger (slope test)	0.004	0.004	1.004 (0.996, 1.012)	0.33
		Weighted median	0.004	0.002	1.004 (0.999, 1.008)	0.12
		Weighted mode	0.006	0.004	1.006 (0.997, 1.014)	0.19
		Simple mode	0.006	0.006	1.006 (0.995, 1.018)	0.26
Cervical cancer	109	IVW	0.002	0.002	1.002 (0.999, 1.006)	0.21
		MR Egger (slope test)	0.002	0.005	1.002 (0.992, 1.012)	0.72
		Weighted median	0.004	0.003	1.004 (0.998, 1.009)	0.19
		Weighted mode	0.006	0.005	1.006 (0.997, 1.016)	0.19
		Simple mode	0.010	0.007	1.010 (0.996, 1.023)	0.16
Kidney cancer	70	IVW	–0.003	0.002	0.997 (0.994, 1.001)	0.11
		MR Egger (slope test)	–0.007	0.006	0.993 (0.983, 1.005)	0.25
		Weighted median	–0.003	0.002	0.997 (0.992, 1.002)	0.25
		Weighted mode	–0.002	0.004	0.998 (0.990, 1.006)	0.60
		Simple mode	–0.001	0.005	0.999 (0.989, 1.008)	0.79
Prostate cancer	160	IVW	–0.168	0.131	0.845 (0.654, 1.093)	0.20
		MR Egger (slope test)	–0.083	0.334	0.920 (0.478, 1.772)	0.80
		Weighted median	–0.055	0.159	0.947 (0.693, 1.294)	0.73
		Weighted mode	0.001	0.296	1.001 (0.560, 1.789)	> 0.99
		Simple mode	–0.263	0.486	0.769 (0.297, 1.992)	0.59
Skin cancer	160	IVW	0.114	0.123	1.121 (0.881, 1.427)	0.35
		MR Egger (slope test)	0.003	0.310	1.003 (0.547, 1.839)	> 0.99
		Weighted median	0.109	0.178	1.115 (0.787, 1.580)	0.54
		Weighted mode	–0.482	0.380	0.618 (0.293, 1.301)	0.21
		Simple mode	0.030	0.475	1.031 (0.406, 2.618)	0.95
Endometrial cancer	160	IVW	–0.018	0.186	0.982 (0.682, 1.414)	0.92
		MR Egger (slope test)	–0.319	0.473	0.727 (0.288, 1.837)	0.50
		Weighted median	–0.231	0.255	0.793 (0.481, 1.309)	0.37
		Weighted mode	–0.307	0.431	0.736 (0.316, 1.711)	0.48
		Simple mode	–0.349	0.617	0.705 (0.210, 2.362)	0.57
Lymphoma	162	IVW	–0.150	0.247	0.861 (0.530, 1.399)	0.55
		MR Egger (slope test)	–0.115	0.627	0.892 (0.261, 3.050)	0.86
		Weighted median	0.151	0.377	1.163 (0.555, 2.437)	0.69
		Weighted mode	0.372	0.688	1.450 (0.377, 5.583)	0.59
		Simple mode	0.423	0.929	1.526 (0.247, 9.436)	0.65
Pancreatic cancer	163	IVW	0.266	0.382	1.305 (0.617, 2.760)	0.49
		MR Egger (slope test)	0.450	0.974	1.568 (0.232, 10.586)	0.65
		Weighted median	0.137	0.600	1.147 (0.354, 3.717)	0.82
		Weighted mode	0.068	1.058	1.070 (0.135, 8.507)	0.95
		Simple mode	0.753	1.394	2.123 (0.138, 32.619)	0.59
Thyroid cancer	156	IVW	–0.245	0.360	0.783 (0.386, 1.585)	0.50
		MR Egger (slope test)	-1.661	0.923	0.190 (0.031, 1.159)	0.07
		Weighted median	–0.216	0.521	0.806 (0.290, 2.238)	0.68
		Weighted mode	–0.570	0.821	0.565 (0.113, 2.825)	0.49
		Simple mode	-1.951	1.241	0.142 (0.012, 1.619)	0.12
Brain cancer	156	IVW	–0.125	0.511	0.882 (0.324, 2.402)	0.81
		MR Egger (slope test)	0.992	1.317	2.696 (0.204, 35.650)	0.45
		Weighted median	–0.658	0.744	0.518 (0.120, 2.225)	0.38
		Weighted mode	-1.190	1.399	0.304 (0.020, 4.724)	0.40
		Simple mode	-2.290	1.816	0.101 (0.003, 3.562)	0.21
Liver cancer	156	IVW	–0.744	0.637	0.475 (0.136, 1.656)	0.24
		MR Egger (slope test)	-2.812	1.636	0.060 (0.002, 1.484)	0.09
		Weighted median	-1.197	0.965	0.302 (0.046, 2.003)	0.22
		Weighted mode	-1.422	1.858	0.241 (0.006, 9.205)	0.45
		Simple mode	0.583	2.467	1.791 (0.014, 225.276)	0.81

MR, Mendelian randomization; SNP, Single nucleotide polymorphisms; SE, Standard error; OR, odds ratio; CI, confidence interval; IVW, inverse variance weighted.

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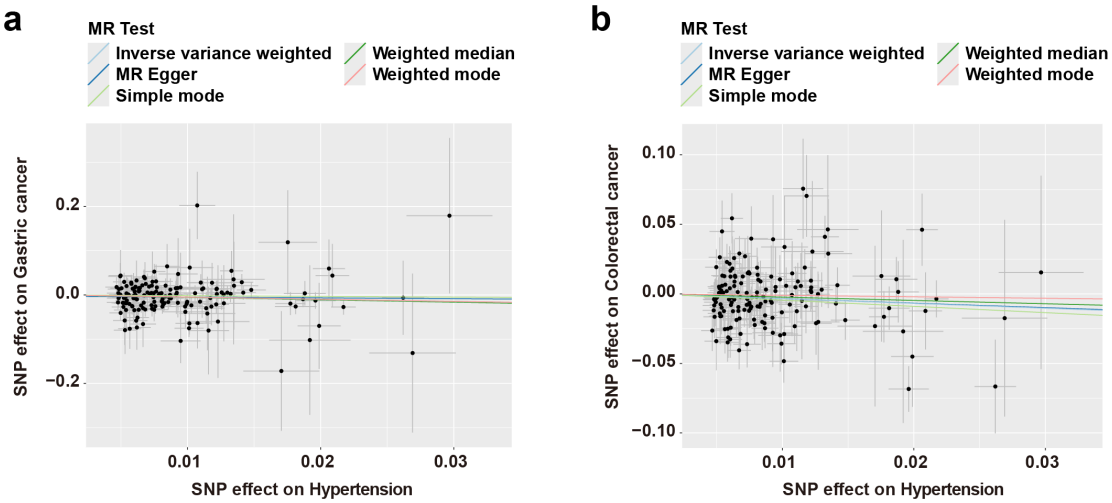

Figure S1 Scatterplots for the casual association between hypertension and cancer risk. (A) The scatterplot for the effect of hypertension on gastric cancer. (B) The scatterplot for the effect of hypertension on colorectal cancer. MR, Mendelian randomization; SNP, single nucleotide polymorphism.

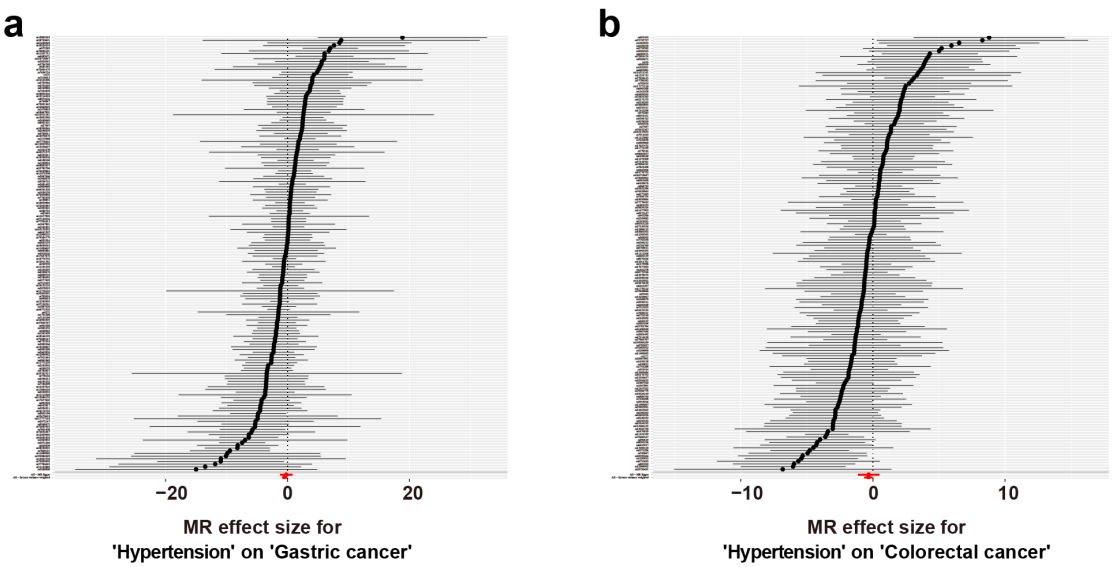

Figure S2 Forest plots of MR effect size for hypertension on cancer. (A) MR effect size for hypertension on gastric cancer. (B) MR effect size for hypertension on colorectal cancer. MR, Mendelian randomization.

https://dx.doi.org/10.21037/tcr-2025-1168

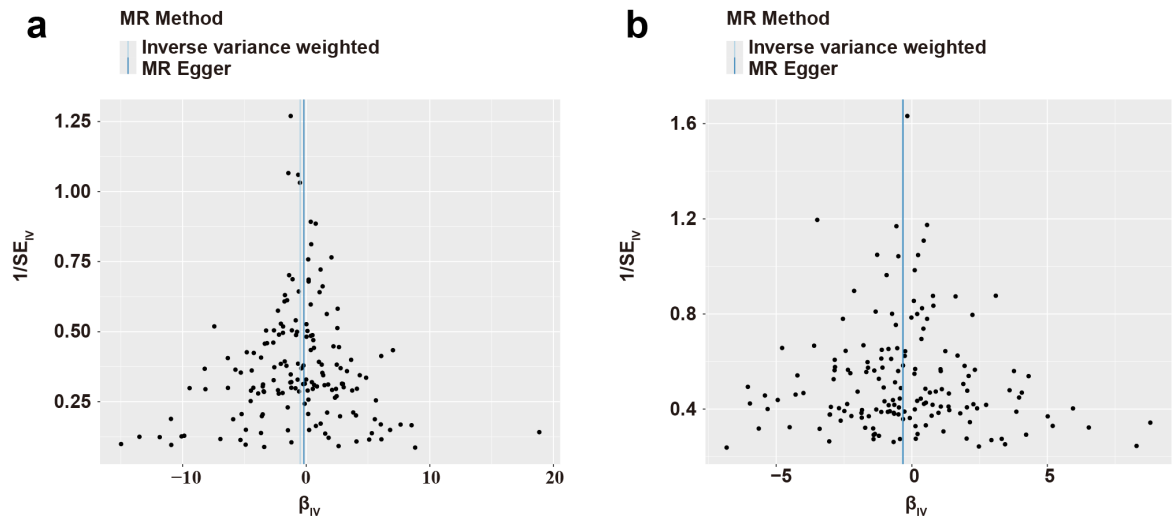

Figure S3 Funnel plot for hypertension on cancer. (A) Funnel plot for hypertension on gastric cancer. (B) Funnel plot for hypertension on colorectal cancer. MR, Mendelian randomization; SE, standard error.

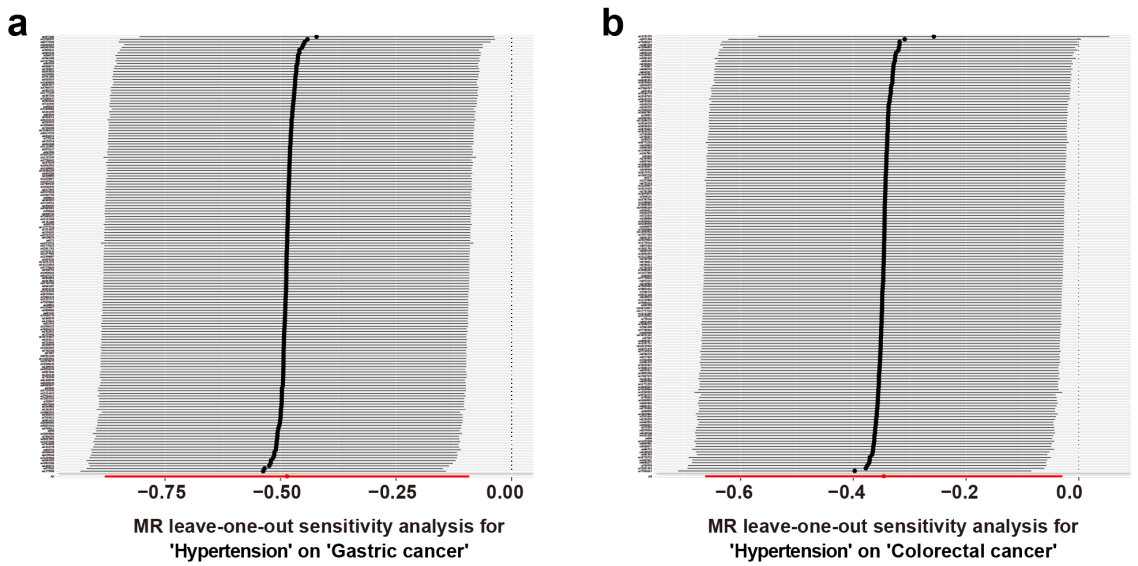

Figure S4 Leave-one-out analysis for hypertension on cancer. (A) Leave-one-out analysis for hypertension on gastric cancer. (B) Leave-one-out analysis for hypertension on colorectal cancer. MR, Mendelian randomization.

https://dx.doi.org/10.21037/tcr-2025-1168

Table S5 Detailed information on the SNPs selected as IVs associated with lymphoma

SNP	EA	OA	EAF	P	R^2	F-statistic
rs143700307	A	G	0.02	3.31E−08	6.22E−05	30.52
rs9271573	C	A	0.62	3.55E−09	7.10E−05	34.85
rs4713570	T	C	0.22	1.09E−16	1.40E−04	68.79
rs76106586	G	A	0.03	3.87E−08	6.16E−05	30.21
rs13255292	T	C	0.28	5.34E−10	7.85E−05	38.55
rs7945144	G	A	0.21	1.45E−09	7.46E−05	36.60

SNP, single nucleotide polymorphism; EA, effect allele; OA, other alleles; EAF, effect allele frequency; P, P value for the association between SNPs and exposure; R^2, a measure of linkage disequilibrium.

Table S6 Detailed information on the SNPs selected as IVs associated with thyroid cancer.

SNP	EA	OA	EAF	P	R^2	F-statistic
rs2490391	C	A	0.57	1.69E−08	9.16E−05	31.83
rs11693806	G	C	0.69	3.69E−22	2.70E−04	93.69
rs4975538	C	G	0.41	4.33E−10	1.12E−04	38.96
rs13287517	C	G	0.34	8.38E−10	1.08E−04	37.67
rs10759944	G	A	0.65	1.53E-54	6.96E−04	241.88
rs72743467	C	A	0.22	7.28E−12	1.35E−04	46.95
rs62235753	T	C	0.01	3.89E−20	2.43E−04	84.48

SNP, single nucleotide polymorphism; EA, effect allele; OA, other alleles; EAF, effect allele frequency; P, P value for the association between SNPs and exposure; R^2, a measure of linkage disequilibrium.

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Table S7 Reverse MR results for the association between cancer and hypertension risk

Exposure	SNPs	MR method	β	SE	OR (95%CI)	P
Lymphoma	4	IVW	−0.008	0.004	0.992 (0.985, 1.000)	0.04
		MR Egger (slope test)	−0.023	0.013	0.977 (0.952, 1.003)	0.22
		Weighted median	−0.007	0.004	0.993 (0.985, 1.000)	0.06
		Weighted mode	−0.001	0.007	0.999 (0.986, 1.012)	0.88
		Simple mode	−0.001	0.007	0.999 (0.986, 1.011)	0.84
Thyroid cancer	7	IVW	0.008	0.003	1.008 (1.002, 1.013)	0.01
		MR Egger (slope test)	0.006	0.937	1.001 (0.988, 1.013)	0.94
		Weighted median	0.002	<0.001	1.006 (1.003, 1.009)	<0.001
		Weighted mode	0.002	0.001	1.006 (1.003, 1.010)	0.01
		Simple mode	0.007	0.002	1.007 (1.002, 1.011)	0.02
Breast cancer	88	IVW	0.001	0.002	1.001 (0.997, 1.005)	0.65
		MR Egger (slope test)	0.005	0.628	0.998 (0.988, 1.007)	0.63
		Weighted median	<0.001	0.003	1.000 (0.995, 1.006)	0.96
		Weighted mode	<−0.001	0.002	0.999 (0.995, 1.004)	0.76
		Simple mode	−0.004	0.006	0.996 (0.985, 1.007)	0.51
Prostate cancer	77	IVW	<−0.001	0.002	0.999 (0.996, 1.003)	0.62
		MR Egger (slope test)	0.001	0.004	1.001 (0.994, 1.008)	0.78
		Weighted median	0.001	0.002	1.001 (0.997, 1.004)	0.77
		Weighted mode	<0.001	0.002	1.000 (0.997, 1.004)	0.79
		Simple mode	0.001	0.004	1.001 (0.994, 1.008)	0.75
Skin cancer	45	IVW	<−0.001	0.003	1.000 (0.994, 1.006)	0.99
		MR Egger (slope test)	0.011	0.007	1.011 (0.998, 1.024)	0.12
		Weighted median	0.001	0.002	1.001 (0.997, 1.006)	0.60
		Weighted mode	0.002	0.003	1.002 (0.996, 1.008)	0.46
		Simple mode	0.004	0.005	1.004 (0.995, 1.013)	0.40
Colorectal cancer	26	IVW	0.001	0.002	1.001 (0.996, 1.005)	0.75
		MR Egger (slope test)	−0.012	0.008	0.988 (0.972, 1.005)	0.17
		Weighted median	−0.001	0.003	0.999 (0.994, 1.004)	0.73
		Weighted mode	−0.004	0.004	0.996 (0.988, 1.004)	0.37
		Simple mode	−0.003	0.006	0.997 (0.985, 1.009)	0.60
Endometrial cancer	13	IVW	0.002	0.006	1.002 (0.990, 1.014)	0.76
		MR Egger (slope test)	−0.008	0.026	0.992 (0.942, 1.043)	0.75
		Weighted median	−0.001	0.004	0.999 (0.992, 1.007)	0.87
		Weighted mode	0.001	0.005	1.001 (0.992, 1.010)	0.81
		Simple mode	0.001	0.007	1.001 (0.987, 1.015)	0.87
Lung cancer	3	IVW	−0.005	0.009	0.996 (0.978, 1.013)	0.61
		MR Egger (slope test)	0.038	0.045	1.038 (0.950, 1.135)	0.56
		Weighted median	<−0.001	0.003	1.000 (0.993, 1.006)	0.92
		Weighted mode	0.001	0.003	1.001 (0.995, 1.008)	0.72
		Simple mode	−0.002	0.006	0.998 (0.987, 1.009)	0.78
Gastric cancer	3	IVW	0.002	0.002	1.002 (0.997, 1.006)	0.41
		MR Egger (slope test)	0.010	0.008	1.010 (0.995, 1.026)	0.42
		Weighted median	0.002	0.002	1.002 (0.997, 1.007)	0.49
		Weighted mode	0.004	0.003	1.004 (0.999, 1.010)	0.25
		Simple mode	−0.002	0.004	0.998 (0.991, 1.006)	0.68
Liver cancer	3	IVW	0.005	0.005	1.005 (0.995, 1.015)	0.36
		MR Egger (slope test)	0.136	0.251	1.146 (0.701, 1.872)	0.68
		Weighted median	0.001	0.001	1.001 (0.999, 1.004)	0.22
		Weighted mode	0.001	0.001	1.001 (0.999, 1.003)	0.40
		Simple mode	0.001	0.410	1.001 (0.999, 1.004)	0.41

MR, Mendelian randomization; SNP, single nucleotide polymorphisms; OR, odds ratio; SE, standard error; CI, confidence interval; IVW, inverse variance weighted.

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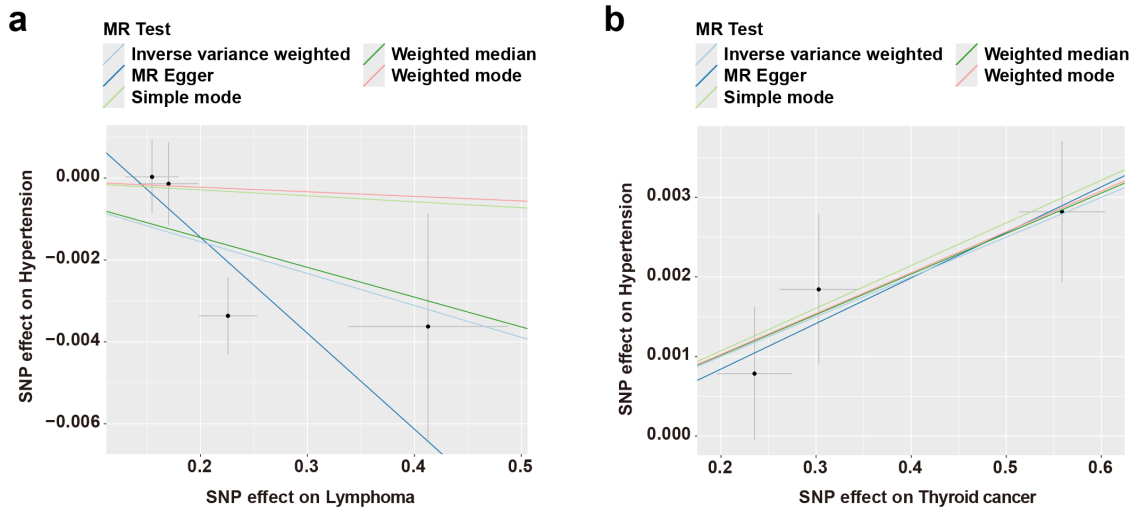

Figure S5 Scatterplots for the casual association between cancer and hypertension risk. (A) The scatterplot for the effect of lymphoma on hypertension. (B) The scatterplot for the effect of thyroid cancer on hypertension. MR, Mendelian randomization; SNP, single nucleotide polymorphism.

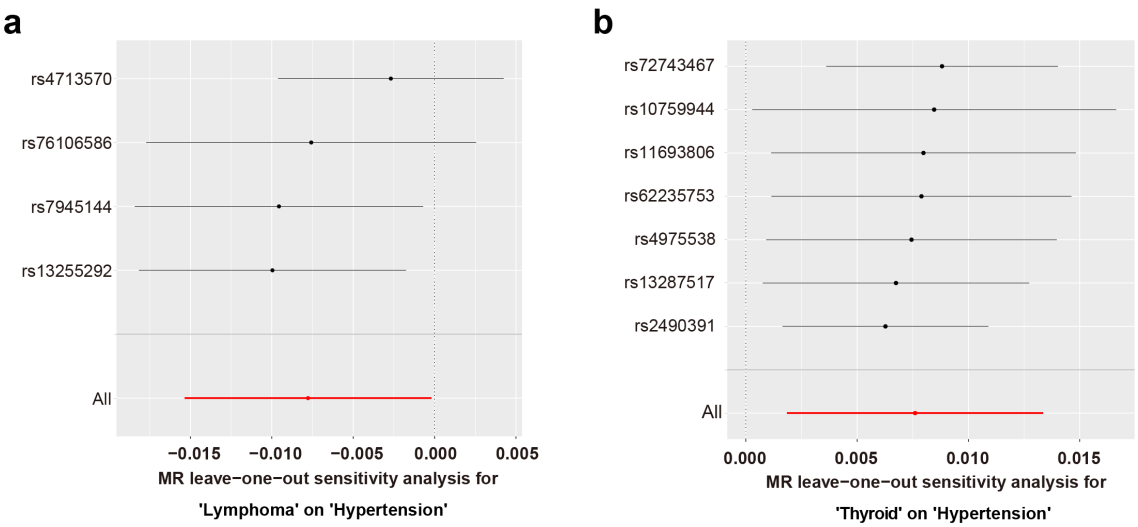

Figure S6 Leave-one-out analysis for cancer on hypertension. (A) Leave-one-out analysis for lymphoma on hypertension. (B) Leave-one-out analysis for thyroid cancer on hypertension. MR, Mendelian randomization.

https://dx.doi.org/10.21037/tcr-2025-1168

Table S8 Replicated MR results for the association between hypertension and cancer risk

Outcome	Source	SNPs	MR method	β	SE	OR (95%CI)	P
Gastric cancer	FinnGen	156	IVW	–0.669	0.373	0.512 (0.246, 1.065)	0.07
			MR Egger (slope test)	0.612	0.962	1.845 (0.280, 12.148)	0.53
			Weighted median	–0.232	0.556	0.793 (0.267, 2.357)	0.68
			Weighted mode	–0.289	1.080	0.749 (0.090, 6.219)	0.79
			Simple mode	0.027	1.480	1.028 (0.056, 18.693)	0.99
Colorectal cancer	FinnGen	155	IVW	–0.238	0.191	0.788 (0.542, 1.144)	0.21
			MR Egger (slope test)	-1.052	0.499	0.349 (0.131, 0.929)	0.04
			Weighted median	–0.295	0.272	0.745 (0.437, 1.268)	0.28
			Weighted mode	–0.294	0.473	0.746 (0.295, 1.885)	0.54
			Simple mode	–0.134	0.667	0.875 (0.237, 3.231)	0.84
Gastric cancer	East Asian population	134	IVW	–0.556	0.218	0.573 (0.374, 0.879)	0.01
			MR Egger (slope test)	–0.341	0.574	0.711 (0.231, 2.192)	0.55
			Weighted median	–0.749	0.313	0.473 (0.256, 0.874)	0.02
			Weighted mode	-1.272	0.494	0.280 (0.106, 0.738)	0.01
			Simple mode	-1.272	0.704	0.280 (0.070, 1.114)	0.07
Colorectal cancer	East Asian population	134	IVW	–0.764	0.240	0.466 (0.291, 0.745)	0.001
			MR Egger (slope test)	–0.472	0.631	0.624 (0.181, 2.148)	0.46
			Weighted median	–0.546	0.340	0.579 (0.297, 1.128)	0.11
			Weighted mode	–0.138	0.483	0.871 (0.338, 2.243)	0.78
			Simple mode	0.108	0.704	1.114 (0.280, 4.429)	0.88

MR, Mendelian randomization; SNP, single nucleotide polymorphisms; OR, odds ratio; SE, standard error; CI, confidence interval; IVW, inverse variance weighted.

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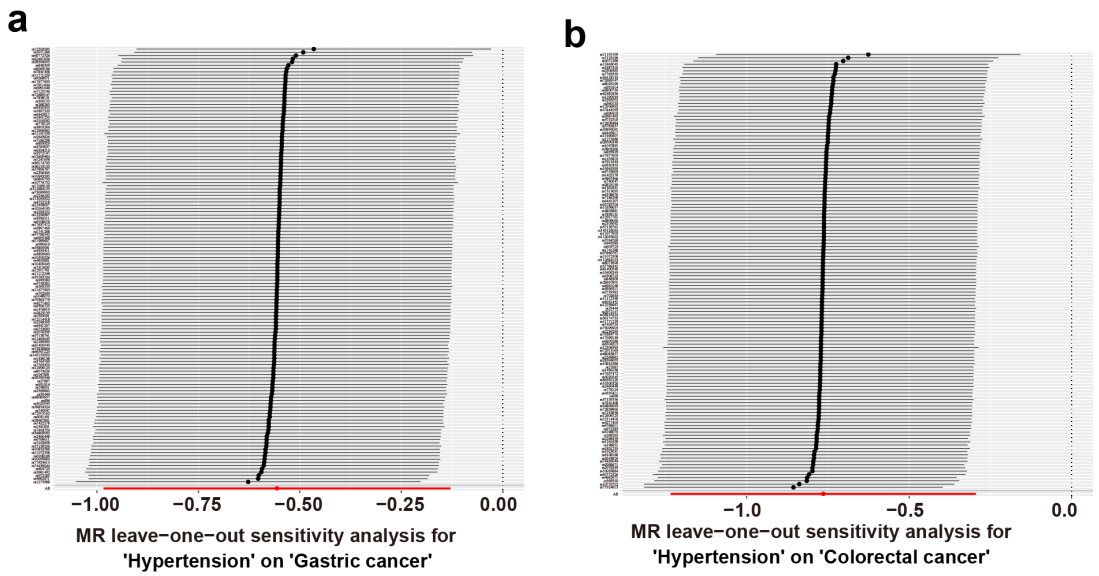

Figure S7 Leave-one-out analysis for hypertension on gastrointestinal cancer from the FinnGen study. (A) Leave-one-out analysis for hypertension on gastric cancer. (B) Leave-one-out analysis for hypertension on colorectal cancer. MR, Mendelian randomization.

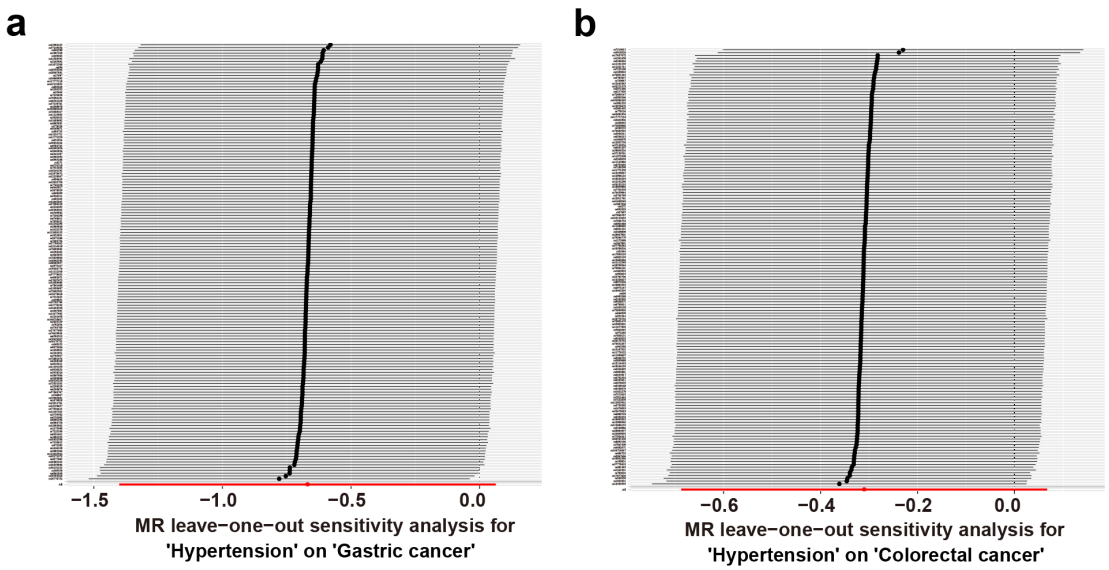

Figure S8 Leave-one-out analysis for hypertension on gastrointestinal cancer from East Asian population cohort. (A) Leave-one-out analysis for hypertension on gastric cancer. (B) Leave-one-out analysis for hypertension on colorectal cancer. MR, Mendelian randomization.

https://dx.doi.org/10.21037/tcr-2025-1168

Table S9 Detailed information on the SNPs selected as IVs associated with ACEI/ARB

SNP	EA	OA	EAF	P	R^2	F-statistic
rs880315	C	T	0.49	7.12E−33	6.00E−04	142.62
rs4970834	T	C	0.13	1.37E−11	1.92E−04	45.71
rs3790604	A	C	0.17	1.61E−21	3.82E−04	90.78
rs146718647	T	C	0.02	5.98E−17	2.95E−04	69.98
rs2936045	G	T	0.74	6.77E−09	1.41E−04	33.60
rs2796056	A	G	0.53	1.61E−09	1.53E−04	36.40
rs2493133	C	T	0.58	2.60E−10	1.68E−04	39.95
rs4320727	A	G	0.61	1.07E−08	1.38E−04	32.72
rs193084249	G	A	0.02	3.60E−11	1.84E−04	43.82
rs61772578	G	A	0.07	1.13E−11	1.94E−04	46.10
rs6679817	T	C	0.39	2.52E−09	1.50E−04	35.52
rs13008750	T	G	0.17	1.69E−08	1.34E−04	31.82
rs76217384	G	A	0.23	6.29E−10	1.61E−04	38.23
rs268263	A	T	0.69	7.15E−15	2.55E−04	60.56
rs2358891	A	G	0.15	1.20E−08	1.37E−04	32.49
rs2943660	G	T	0.75	7.58E−11	1.78E−04	42.36
rs1275982	T	C	0.45	1.04E−34	6.35E−04	151.01
rs934229	G	C	0.75	3.37E−10	1.66E−04	39.45
rs4671328	G	T	0.55	7.17E−09	1.41E−04	33.49
rs2084466	G	A	0.64	2.10E−08	1.32E−04	31.40
rs6439804	C	T	0.66	1.97E−09	1.52E−04	36.00
rs4684242	C	G	0.25	2.02E−08	1.32E−04	31.47
rs9844972	C	G	0.07	6.90E−09	1.41E−04	33.56
rs9811922	G	T	0.09	3.60E−13	2.22E−04	52.85
rs1290786	T	C	0.30	6.78E−09	1.41E−04	33.60
rs2643826	T	C	0.42	2.65E−18	3.20E−04	76.13
rs35593046	T	G	0.39	1.97E−18	3.23E−04	76.72
rs6445597	A	G	0.26	9.07E−10	1.58E−04	37.52
rs13107325	T	C	0.07	4.78E−10	1.63E−04	38.76
rs13118687	A	G	0.49	2.75E−13	2.25E−04	53.38
rs300934	G	T	0.73	1.40E−14	2.49E−04	59.24
rs56329057	T	C	0.20	8.83E−13	2.15E−04	51.09
rs59761494	T	C	0.26	1.83E−10	1.71E−04	40.64
rs10155132	G	A	0.63	9.17E−11	1.77E−04	41.99
rs6824339	T	C	0.40	1.44E−10	1.73E−04	41.11
rs12509595	C	T	0.30	1.41E-75	1.42E−03	338.42
rs11241305	A	C	0.45	4.34E−11	1.83E−04	43.45
rs7716050	G	A	0.05	1.99E−08	1.33E−04	31.51
rs17677603	G	A	0.35	3.05E−14	2.43E−04	57.70
rs6883937	G	A	0.19	2.35E−11	1.88E−04	44.66
rs2984644	A	G	0.18	1.83E−11	1.90E−04	45.14
rs7701003	G	A	0.37	6.27E−19	3.32E−04	78.98
rs36071027	T	C	0.24	1.97E−09	1.52E−04	36.00
rs10059884	A	C	0.60	1.88E−19	3.42E−04	81.36
rs256903	A	C	0.75	2.16E−11	1.89E−04	44.82
rs3814424	T	C	0.30	1.56E−12	2.10E−04	49.97
rs39840	C	G	0.75	1.18E−09	1.56E−04	37.01
rs9388531	A	G	0.44	2.66E−25	4.55E−04	108.02
rs2327429	C	T	0.39	1.34E−10	1.74E−04	41.26
rs57139556	G	A	0.08	4.64E−17	2.97E−04	70.49
rs55730499	T	C	0.08	6.10E−15	2.56E−04	60.87
rs6932812	G	C	0.08	7.85E−09	1.40E−04	33.31
rs2744133	G	A	0.19	2.32E−10	1.69E−04	40.18
rs1799945	G	C	0.10	4.13E−14	2.40E−04	57.11
rs9394951	T	C	0.60	2.96E−14	2.43E−04	57.76
rs1581717	A	C	0.41	1.91E−08	1.33E−04	31.58
rs6912683	A	C	0.55	3.19E−08	1.29E−04	30.59
rs35301188	A	G	0.14	3.52E−11	1.85E−04	43.87
rs73033340	G	A	0.03	2.91E−08	1.29E−04	30.76
rs972283	G	A	0.60	1.47E−17	3.06E−04	72.75
rs1722883	C	T	0.44	9.34E−12	1.96E−04	46.46
rs3918226	T	C	0.08	3.30E−37	6.83E−04	162.45
rs10254101	T	C	0.18	4.02E−12	2.03E−04	48.12
rs4721096	C	T	0.86	3.36E−08	1.28E−04	30.49
rs929250	T	G	0.79	2.58E−19	3.40E−04	80.74
rs6961048	G	C	0.08	1.67E−14	2.48E−04	58.89
rs3110697	G	A	0.65	1.30E−08	1.36E−04	32.33
rs78745308	G	C	0.04	1.62E−08	1.34E−04	31.90
rs3735260	G	A	0.06	3.44E−09	1.47E−04	34.92
rs7803355	T	C	0.15	3.06E−10	1.67E−04	39.64
rs42040	T	C	0.15	3.49E−08	1.28E−04	30.41
rs143524414	A	G	0.04	3.44E−08	1.28E−04	30.44
rs2247355	T	C	0.17	5.88E−11	1.80E−04	42.86
rs10100333	T	C	0.47	8.55E−14	2.34E−04	55.67
rs13280592	G	C	0.73	2.62E−08	1.30E−04	30.97
rs2980871	G	A	0.32	2.48E−09	1.50E−04	35.56
rs12549801	G	A	0.73	6.49E−09	1.42E−04	33.68
rs3802228	G	A	0.46	1.44E−12	2.11E−04	50.13
rs7008914	C	T	0.30	1.25E−09	1.55E−04	36.89
rs66500717	G	A	0.37	4.02E−13	2.22E−04	52.63
rs10112371	G	A	0.41	3.39E−08	1.28E−04	30.47
rs7847526	C	T	0.24	2.57E−10	1.68E−04	39.98
rs10757272	T	C	0.56	4.96E−17	2.96E−04	70.35
rs563132	T	A	0.33	5.03E−09	1.44E−04	34.18
rs12555832	A	G	0.10	1.79E−10	1.71E−04	40.69
rs79668541	T	C	0.16	3.71E−24	4.33E−04	102.80
rs2484294	A	G	0.77	1.97E−13	2.27E−04	54.04
rs1907266	C	T	0.86	7.41E−11	1.79E−04	42.41
rs1888693	A	G	0.39	2.72E−10	1.68E−04	39.86
rs7070847	A	G	0.17	1.57E−14	2.48E−04	59.01
rs57541197	A	G	0.14	4.19E−29	5.28E−04	125.39
rs2236295	T	G	0.31	1.71E−12	2.10E−04	49.80
rs2068888	A	G	0.52	1.97E−09	1.52E−04	36.00
rs2901761	A	G	0.47	6.09E−12	1.99E−04	47.30
rs604723	C	T	0.61	8.85E−35	6.37E−04	151.34
rs9734135	A	G	0.83	6.77E−14	2.36E−04	56.13
rs12366015	G	A	0.64	2.06E−10	1.70E−04	40.41
rs7938342	A	T	0.68	2.83E−33	6.08E−04	144.45
rs10160794	T	C	0.56	1.97E−09	1.52E−04	36.00
rs2856653	C	T	0.79	1.91E−13	2.28E−04	54.09
rs2276153	G	C	0.22	2.88E−14	2.43E−04	57.81
rs12801636	A	G	0.34	9.08E−11	1.77E−04	42.01
rs415895	G	C	0.53	8.83E−18	3.10E−04	73.76
rs7310615	G	C	0.52	4.74E−27	4.88E−04	116.00
rs35429	G	A	0.33	8.23E−35	6.37E−04	151.48
rs77216612	G	A	0.34	1.29E−11	1.93E−04	45.82
rs10770608	A	T	0.63	3.14E−13	2.24E−04	53.12
rs2238066	A	G	0.63	4.10E−10	1.64E−04	39.06
rs7134677	T	C	0.34	3.25E−11	1.85E−04	44.02
rs490872	G	A	0.72	3.11E−09	1.48E−04	35.12
rs1689040	T	C	0.40	9.49E−18	3.10E−04	73.62
rs10870597	G	A	0.23	8.03E−11	1.78E−04	42.25
rs9506725	C	T	0.21	8.94E−12	1.96E−04	46.55
rs3803266	C	G	0.58	3.06E−09	1.48E−04	35.15
rs10139343	C	G	0.06	3.18E−08	1.29E−04	30.59
rs72683923	C	T	0.02	4.06E−11	1.83E−04	43.58
rs28455998	A	T	0.48	7.75E−10	1.59E−04	37.82
rs8034820	C	G	0.63	6.70E−10	1.60E−04	38.11
rs12909307	G	A	0.67	1.51E−20	3.63E−04	86.35
rs7174250	T	C	0.30	8.51E−11	1.77E−04	42.14
rs11639246	A	G	0.40	2.23E−09	1.51E−04	35.77
rs1894400	T	C	0.23	4.52E−35	6.42E−04	152.67
rs77924615	A	G	0.20	7.29E−16	2.74E−04	65.05
rs7196161	A	G	0.40	2.19E−08	1.32E−04	31.32
rs72762705	T	C	0.22	2.41E−09	1.50E−04	35.61
rs62039768	A	C	0.10	9.05E−09	1.39E−04	33.03
rs55872725	T	C	0.32	3.03E−29	5.30E−04	126.03
rs11646852	A	G	0.57	5.71E−11	1.81E−04	42.92
rs2966114	C	T	0.43	1.55E−10	1.72E−04	40.96
rs2437957	A	G	0.42	4.08E−15	2.60E−04	61.66
rs12938269	T	C	0.52	3.64E−09	1.47E−04	34.81
rs9907781	G	C	0.78	4.57E−10	1.64E−04	38.85
rs17637472	A	G	0.28	7.31E−14	2.36E−04	55.98
rs3785837	A	G	0.63	4.60E−10	1.63E−04	38.84
rs4277405	T	C	0.63	4.66E−16	2.78E−04	65.93
rs62059712	C	T	0.08	6.11E−10	1.61E−04	38.29
rs72915181	T	G	0.20	7.17E−09	1.41E−04	33.49
rs663129	A	G	0.23	3.12E−08	1.29E−04	30.63
rs144826254	G	T	0.12	5.30E−08	1.25E−04	29.60
rs167479	T	G	0.48	3.05E−28	5.11E−04	121.45
rs7412	T	C	0.06	9.55E−22	3.86E−04	91.81
rs516246	T	C	0.51	1.71E−08	1.34E−04	31.80
rs6031431	G	A	0.40	1.44E−10	1.73E−04	41.11
rs78953748	G	T	0.11	6.26E−27	4.86E−04	115.45
rs8118848	A	G	0.19	4.05E−19	3.36E−04	79.84
rs6054200	A	G	0.71	3.26E−10	1.66E−04	39.51
rs6039211	G	A	0.43	2.26E−19	3.41E−04	81.00
rs2229742	C	G	0.10	1.02E−08	1.38E−04	32.80
rs76346476	A	G	0.04	1.35E−08	1.36E−04	32.25

ACEI/ARB, angiotensin-converting enzyme inhibitor/angiotensin receptor blocker; SNP, single nucleotide polymorphism; EA, effect allele; OA, other alleles; EAF, effect allele frequency; P, P value for the association between SNPs and exposure; R^2, a measure of linkage disequilibrium.

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Table S10 Detailed information on the SNPs selected as IVs associated with beta-blockers

SNP	EA	OA	EAF	P	R^2	F-statistic
rs880315	C	T	0.49	1.04E−18	3.48E−04	77.99
rs4970834	T	C	0.13	1.45E−11	2.03E−04	45.60
rs10776752	T	G	0.17	4.15E−16	2.95E−04	66.16
rs59980837	T	G	0.02	3.88E−10	1.75E−04	39.17
rs41305070	G	A	0.19	1.49E−08	1.43E−04	32.07
rs7543029	C	T	0.41	1.87E−08	1.41E−04	31.62
rs2493135	G	C	0.59	1.71E−08	1.42E−04	31.80
rs73029563	G	C	0.56	2.00E−08	1.41E−04	31.49
rs1275923	T	C	0.44	6.27E−13	2.31E−04	51.76
rs13409330	G	A	0.64	1.86E−10	1.81E−04	40.60
rs4684242	C	G	0.25	3.17E−08	1.37E−04	30.60
rs648103	C	T	0.74	2.78E−11	1.98E−04	44.33
rs34687996	A	C	0.66	1.04E−08	1.46E−04	32.77
rs10434005	G	A	0.64	1.70E−08	1.42E−04	31.81
rs75725917	A	C	0.26	7.68E−20	3.71E−04	83.13
rs9286351	G	A	0.41	3.10E−11	1.97E−04	44.11
rs80157433	G	A	0.22	1.63E−10	1.82E−04	40.87
rs2625268	T	C	0.63	1.01E−08	1.46E−04	32.82
rs10857147	T	A	0.29	6.45E−31	5.96E−04	133.67
rs6892983	A	C	0.41	8.69E−11	1.88E−04	42.10
rs7442660	A	G	0.26	1.62E−11	2.03E−04	45.39
rs7733331	C	T	0.59	8.55E−10	1.68E−04	37.63
rs1930948	G	A	0.44	3.41E−13	2.36E−04	52.96
rs2327429	C	T	0.39	1.06E−09	1.66E−04	37.21
rs62434125	C	T	0.05	1.62E−08	1.42E−04	31.90
rs74617384	T	A	0.08	4.17E−13	2.35E−04	52.56
rs6932812	G	C	0.08	5.33E−08	1.32E−04	29.59
rs143439747	A	G	0.07	2.19E−13	2.40E−04	53.82
rs115699278	T	C	0.03	1.95E−11	2.01E−04	45.02
rs12537785	C	T	0.22	2.93E−08	1.37E−04	30.75
rs972284	T	C	0.39	4.38E−09	1.54E−04	34.45
rs3918226	T	C	0.08	6.31E−21	3.93E−04	88.07
rs3735533	C	T	0.78	7.50E−12	2.09E−04	46.89
rs487987	C	A	0.29	1.01E−08	1.47E−04	32.83
rs6988985	C	T	0.42	1.50E−09	1.63E−04	36.53
rs830450	C	T	0.56	8.88E−12	2.08E−04	46.56
rs10757272	T	C	0.56	1.62E−26	5.07E−04	113.57
rs1926032	T	C	0.15	1.00E−18	3.48E−04	78.06
rs180940	G	A	0.58	2.84E−08	1.38E−04	30.81
rs7070847	A	G	0.16	1.08E−10	1.86E−04	41.67
rs72821788	A	G	0.10	4.31E−12	2.14E−04	47.98
rs664485	G	A	0.81	1.70E−09	1.62E−04	36.29
rs505372	C	A	0.83	1.74E−08	1.42E−04	31.77
rs569550	G	T	0.55	9.58E−17	3.08E−04	69.05
rs4923536	G	A	0.57	1.80E−09	1.61E−04	36.18
rs415895	G	C	0.53	1.25E−09	1.65E−04	36.89
rs7310615	G	C	0.52	7.81E−22	4.11E−04	92.21
rs35441	T	C	0.33	4.93E−15	2.73E−04	61.29
rs2681485	A	G	0.60	1.24E−09	1.65E−04	36.90
rs629042	C	G	0.69	1.34E−08	1.44E−04	32.27
rs12909307	G	A	0.67	3.80E−08	1.35E−04	30.25
rs7183988	G	T	0.66	5.01E−24	4.56E−04	102.20
rs36060036	T	C	0.17	2.21E−09	1.60E−04	35.78
rs56094641	G	A	0.31	1.84E−11	2.01E−04	45.14
rs62043959	C	A	0.20	9.57E−09	1.47E−04	32.93
rs258317	T	C	0.25	1.98E−11	2.01E−04	44.99
rs12945851	T	C	0.31	1.06E−08	1.46E−04	32.73
rs9895661	T	C	0.67	7.38E−09	1.49E−04	33.43
rs4277405	T	C	0.63	1.50E−08	1.43E−04	32.06
rs11649807	G	A	0.37	4.33E−08	1.34E−04	29.99
rs167479	T	G	0.49	1.10E−14	2.66E−04	59.71
rs7412	T	C	0.06	4.13E−08	1.34E−04	30.09
rs75245746	C	T	0.11	2.70E−12	2.18E−04	48.90
rs6039211	G	A	0.44	1.36E−12	2.24E−04	50.24

SNP, single nucleotide polymorphism; EA, effect allele; OA, other alleles; EAF, effect allele frequency; P, P value for the association between SNPs and exposure; R^2, a measure of linkage disequilibrium.

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Table S11 Detailed information on the SNPs selected as IVs associated with CCB

SNP	EA	OA	EAF	P	R^2	F-statistic
rs880315	C	T	0.50	1.73E-47	1.02E–03	209.54
rs3790604	A	C	0.18	7.69E–33	6.97E–04	142.47
rs57748895	T	A	0.02	9.23E–09	1.61E–04	33.00
rs4971099	G	A	0.82	3.04E–11	2.16E–04	44.15
rs59180873	G	A	0.08	3.73E–08	1.48E–04	30.29
rs61772626	G	A	0.07	7.53E–09	1.63E–04	33.39
rs12473088	G	A	0.10	3.48E–08	1.49E–04	30.42
rs73029563	G	C	0.56	2.87E–15	3.05E–04	62.36
rs952227	G	A	0.78	4.19E–12	2.35E–04	48.03
rs1275988	T	C	0.43	9.12E-42	8.96E–04	183.32
rs4672441	C	T	0.66	1.61E–09	1.78E–04	36.40
rs1290786	T	C	0.29	8.15E–12	2.29E–04	46.73
rs12638862	G	A	0.44	1.24E–08	1.59E–04	32.42
rs9854769	G	A	0.33	1.16E–08	1.59E–04	32.55
rs648103	C	T	0.74	1.38E–22	4.68E–04	95.64
rs35593046	T	G	0.40	7.19E–21	4.29E–04	87.82
rs6848906	C	T	0.73	5.38E–14	2.77E–04	56.59
rs10015412	C	A	0.74	1.65E–09	1.78E–04	36.35
rs72689147	T	G	0.21	1.28E–09	1.80E–04	36.85
rs11726072	A	G	0.12	3.38E–08	1.49E–04	30.47
rs73249870	T	C	0.26	7.89E–10	1.85E–04	37.79
rs12509595	C	T	0.29	2.00E-42	9.11E–04	186.34
rs10061288	G	A	0.55	6.79E–12	2.30E–04	47.09
rs6898449	G	A	0.35	1.09E–15	3.14E–04	64.26
rs2962383	T	C	0.18	1.97E–09	1.76E–04	36.00
rs7701003	G	A	0.37	5.32E–13	2.55E–04	52.08
rs7733331	C	T	0.59	1.81E–13	2.65E–04	54.20
rs1694068	A	T	0.71	2.56E–08	1.52E–04	31.02
rs10054208	T	C	0.45	4.02E–09	1.69E–04	34.61
rs9375461	A	C	0.44	1.46E–28	6.01E–04	122.90
rs2327429	C	T	0.40	2.98E–10	1.94E–04	39.69
rs1552886	G	A	0.96	8.92E–10	1.84E–04	37.55
rs72836474	T	C	0.02	5.66E–11	2.10E–04	42.93
rs9369409	G	C	0.62	4.87E–17	3.44E–04	70.39
rs998584	A	C	0.51	1.62E–11	2.22E–04	45.39
rs12705389	T	C	0.18	3.08E–12	2.38E–04	48.64
rs7811577	G	C	0.48	1.77E–09	1.77E–04	36.21
rs13234269	A	T	0.41	4.60E–11	2.12E–04	43.34
rs782507	T	C	0.48	4.30E–13	2.57E–04	52.50
rs3918226	T	C	0.08	5.50E–26	5.44E–04	111.14
rs10254101	T	C	0.17	1.69E–09	1.78E–04	36.30
rs4722675	G	A	0.78	1.25E–21	4.46E–04	91.28
rs6961048	G	C	0.08	7.15E–15	2.96E–04	60.56
rs42038	T	C	0.17	1.79E–08	1.55E–04	31.71
rs143524414	A	G	0.04	1.64E–08	1.56E–04	31.88
rs35783704	A	G	0.05	2.26E–09	1.75E–04	35.73
rs13273172	G	A	0.47	4.86E–09	1.68E–04	34.24
rs7463212	A	T	0.45	6.61E–19	3.86E–04	78.88
rs58429174	T	C	0.26	1.15E–08	1.59E–04	32.58
rs2977324	G	T	0.65	2.07E–13	2.64E–04	53.94
rs7815731	G	C	0.50	5.76E–08	1.44E–04	29.44
rs76038906	T	G	0.03	2.03E–08	1.54E–04	31.46
rs1250505	T	G	0.38	1.32E–11	2.24E–04	45.79
rs10757272	T	C	0.56	3.58E–10	1.92E–04	39.33
rs28558845	C	G	0.21	7.71E–09	1.63E–04	33.35
rs12416331	A	T	0.16	2.48E–25	5.29E–04	108.16
rs74157561	G	A	0.09	1.97E–09	1.76E–04	36.00
rs10886864	T	C	0.85	5.76E–09	1.66E–04	33.91
rs7070847	A	G	0.16	3.06E–11	2.16E–04	44.14
rs1658425	C	G	0.51	3.48E–14	2.81E–04	57.44
rs60457246	A	G	0.16	1.06E–17	3.59E–04	73.40
rs11187838	A	G	0.44	8.59E–15	2.94E–04	60.20
rs633185	C	G	0.59	5.92E–25	5.21E–04	106.43
rs525028	A	G	0.49	6.71E–12	2.30E–04	47.11
rs562434	A	G	0.35	5.96E–30	6.32E–04	129.26
rs10835920	T	C	0.53	3.01E–08	1.50E–04	30.70
rs751984	C	T	0.31	1.07E–11	2.26E–04	46.20
rs75162774	A	G	0.24	6.18E–10	1.87E–04	38.26
rs415895	G	C	0.52	9.64E–13	2.49E–04	50.92
rs3184504	C	T	0.74	1.96E–12	2.42E–04	49.53
rs35443	C	G	0.32	6.47E–27	5.64E–04	115.39
rs2024385	A	T	0.46	1.59E–10	2.00E–04	40.92
rs2024077	A	G	0.61	1.05E–09	1.82E–04	37.23
rs7134677	T	C	0.35	2.02E–11	2.20E–04	44.96
rs11105352	A	G	0.26	1.58E–15	3.11E–04	63.52
rs620124	C	G	0.82	2.18E–14	2.85E–04	58.36
rs28415454	T	C	0.20	1.13E–08	1.60E–04	32.60
rs1378941	A	C	0.45	7.68E–13	2.51E–04	51.36
rs4778848	A	C	0.28	3.30E–19	3.93E–04	80.25
rs1894400	T	C	0.22	3.83E–22	4.58E–04	93.62
rs12906962	C	T	0.29	2.03E–08	1.54E–04	31.47
rs77924615	A	G	0.20	3.00E–08	1.50E–04	30.71
rs56094641	G	A	0.31	2.67E–16	3.28E–04	67.04
rs9922008	C	T	0.61	8.48E–10	1.84E–04	37.65
rs9888752	T	C	0.41	7.88E–09	1.63E–04	33.31
rs467357	G	A	0.23	2.35E–16	3.29E–04	67.28
rs197920	T	C	0.34	2.42E–09	1.74E–04	35.60
rs1012383	T	G	0.83	5.84E–10	1.88E–04	38.38
rs887258	G	C	0.73	1.53E–13	2.67E–04	54.53
rs321901	C	A	0.33	3.11E–08	1.50E–04	30.63
rs7412	T	C	0.06	1.06E–10	2.04E–04	41.71
rs12978472	G	C	0.13	2.26E–19	3.96E–04	81.00
rs1887320	A	G	0.48	4.56E–16	3.23E–04	65.98
rs6031431	G	A	0.39	4.95E–14	2.78E–04	56.75
rs8123890	G	A	0.43	9.32E–10	1.83E–04	37.46
rs6026739	T	A	0.10	2.02E–14	2.86E–04	58.51
rs8118848	A	G	0.19	1.70E–10	2.00E–04	40.79
rs71313931	G	C	0.24	4.51E–10	1.90E–04	38.88

CCB, calcium channel blocker; SNP, single nucleotide polymorphism; EA, effect allele; OA, other alleles; EAF, effect allele frequency; P, P value for the association between SNPs and exposure; R^2, a measure of linkage disequilibrium.

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Table S12 Detailed information on the SNPs selected as IVs associated with diuretics

SNP	EA	OA	EAF	P	R^2	F-statistic
rs880315	C	T	0.49	5.32E−29	5.45E−04	124.91
rs72993045	C	T	0.03	2.09E−18	3.34E−04	76.60
rs57748895	T	A	0.02	8.43E−10	1.64E−04	37.66
rs59264807	T	C	0.38	3.21E−08	1.33E−04	30.57
rs7599224	G	T	0.43	1.18E−08	1.42E−04	32.53
rs268263	A	T	0.69	3.92E−09	1.51E−04	34.66
rs1275988	T	C	0.44	1.08E−35	6.78E−04	155.52
rs2052926	T	C	0.77	3.20E−09	1.53E−04	35.06
rs77463690	G	A	0.09	2.32E−08	1.36E−04	31.21
rs664223	T	C	0.40	7.79E−21	3.82E−04	87.66
rs6442105	G	A	0.67	3.93E−08	1.32E−04	30.18
rs3774475	A	T	0.39	7.27E−09	1.46E−04	33.46
rs6823889	A	G	0.73	4.19E−10	1.70E−04	39.02
rs72718015	G	A	0.16	3.97E−10	1.71E−04	39.13
rs11100769	T	C	0.68	1.02E−10	1.82E−04	41.79
rs13104866	A	G	0.65	2.89E−10	1.73E−04	39.74
rs12509595	C	T	0.29	5.79E−25	4.65E−04	106.48
rs9327633	A	T	0.54	1.26E−08	1.41E−04	32.39
rs4235770	G	C	0.51	1.24E−12	2.20E−04	50.43
rs6892983	A	C	0.41	1.20E−14	2.60E−04	59.54
rs4264931	A	G	0.43	8.14E−09	1.45E−04	33.24
rs2984644	A	G	0.17	1.49E−08	1.40E−04	32.07
rs7701003	G	A	0.37	7.28E−20	3.63E−04	83.24
rs2193951	G	T	0.59	1.10E−15	2.80E−04	64.25
rs9398819	C	T	0.44	3.32E−28	5.29E−04	121.28
rs6918911	T	A	0.07	2.01E−10	1.77E−04	40.46
rs62434125	C	T	0.05	2.01E−13	2.36E−04	53.99
rs198851	G	T	0.90	3.55E−09	1.52E−04	34.86
rs9394951	T	C	0.60	1.70E−14	2.57E−04	58.86
rs12536419	C	A	0.12	1.28E−11	2.00E−04	45.84
rs3918226	T	C	0.08	5.44E−29	5.45E−04	124.87
rs7808452	A	T	0.10	3.42E−19	3.50E−04	80.18
rs55896564	A	G	0.30	3.82E−15	2.70E−04	61.79
rs7011889	C	A	0.40	6.77E−14	2.45E−04	56.13
rs2725371	G	A	0.80	4.27E−09	1.51E−04	34.50
rs1801253	C	G	0.77	1.46E−08	1.40E−04	32.11
rs12258967	G	C	0.17	1.85E−11	1.97E−04	45.13
rs72831344	T	C	0.15	3.05E−16	2.91E−04	66.77
rs2455569	C	T	0.61	1.56E−13	2.38E−04	54.50
rs12363179	A	G	0.16	3.21E−08	1.33E−04	30.57
rs562434	A	G	0.35	3.34E−28	5.29E−04	121.27
rs6484580	T	G	0.50	4.54E−08	1.31E−04	29.90
rs10769256	T	C	0.40	1.33E−11	2.00E−04	45.77
rs557675	G	T	0.47	1.60E−08	1.39E−04	31.93
rs6483656	C	G	0.65	2.30E−12	2.15E−04	49.21
rs7310615	G	C	0.52	3.58E−16	2.90E−04	66.45
rs35441	T	C	0.33	1.13E−23	4.39E−04	100.60
rs2024385	A	T	0.46	7.45E−10	1.65E−04	37.90
rs117913411	A	T	0.03	3.24E−09	1.53E−04	35.03
rs547827	A	G	0.72	4.11E−11	1.90E−04	43.56
rs2681485	A	G	0.60	6.02E−13	2.26E−04	51.84
rs483071	T	C	0.73	1.39E−15	2.78E−04	63.78
rs7338758	C	T	0.57	9.89E−10	1.63E−04	37.35
rs149617015	T	C	0.05	2.26E−09	1.56E−04	35.74
rs72681698	C	T	0.01	2.60E−09	1.55E−04	35.46
rs12909307	G	A	0.67	3.88E−15	2.70E−04	61.76
rs2627308	A	C	0.29	5.90E−13	2.26E−04	51.88
rs1894401	A	G	0.66	2.27E−18	3.34E−04	76.44
rs36060036	T	C	0.17	4.01E−08	1.32E−04	30.15
rs2278557	G	C	0.35	3.94E−13	2.30E−04	52.67
rs62039768	A	C	0.10	1.39E−08	1.41E−04	32.20
rs62048402	A	G	0.32	1.82E−21	3.95E−04	90.53
rs2437957	A	G	0.42	7.75E−10	1.65E−04	37.82
rs35073649	T	C	0.37	1.94E−10	1.77E−04	40.52
rs113086489	T	C	0.55	4.45E−10	1.70E−04	38.91
rs12978472	G	C	0.13	1.18E−17	3.19E−04	73.18
rs1327235	G	A	0.49	4.35E−08	1.31E−04	29.99
rs6031431	G	A	0.40	1.59E−08	1.39E−04	31.94
rs6026732	C	A	0.11	1.22E−16	2.99E−04	68.58
rs6054200	A	G	0.72	4.60E−09	1.50E−04	34.35
rs8118986	G	A	0.18	7.00E−14	2.45E−04	56.07
rs2229742	C	G	0.10	3.48E−09	1.52E−04	34.89

SNP, single nucleotide polymorphism; EA, effect allele; OA, other alleles; EAF, effect allele frequency; P, P value for the association between SNPs and exposure; R^2, a measure of linkage disequilibrium.

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Table S13 Detailed information on the SNPs selected as IVs associated with alpha-blockers

SNP	EA	OA	EAF	P	R^2	F-statistic
rs682178	C	T	0.37	1.16E−10	9.10E−05	41.53
rs35021474	C	G	0.38	4.89E−12	1.05E−04	47.73
rs35441	T	C	0.38	2.77E−08	6.76E−05	30.86
rs758374	C	T	0.30	2.04E−09	7.87E−05	35.93

SNP, single nucleotide polymorphism; EA, effect allele; OA, other alleles; EAF, effect allele frequency; P, P value for the association between SNPs and exposure; R^2, a measure of linkage disequilibrium.

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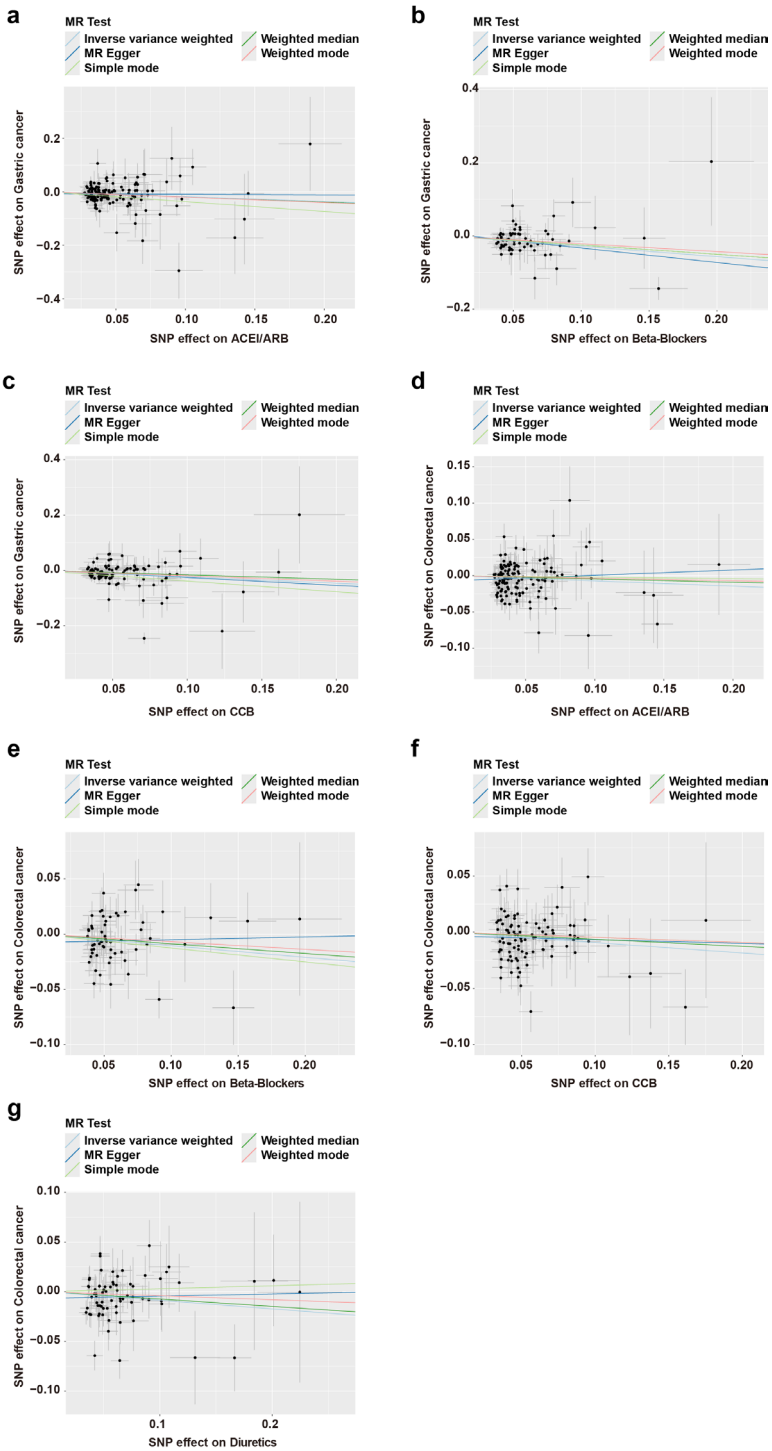

Figure S9 Scatterplots for the casual association between anti-hypertensive drugs and gastrointestinal cancer risk. (A) The scatterplot for the effect of ACEI/ARB on gastric cancer. (B) The scatterplot for the effect of Beta-Blockers on gastric cancer. (C) The scatterplot for the effect of CCB on gastric cancer. (D) The scatterplot for the effect of ACEI/ARB on colorectal cancer. (E) The scatterplot for the effect of Beta-Blockers on colorectal cancer. (F) The scatterplot for the effect of CCB on colorectal cancer. (G) The scatterplot for the effect of diuretics on colorectal cancer. MR, Mendelian randomization; SNP, single nucleotide polymorphism; ACEI/ARB, angiotensin-converting enzyme inhibitor/angiotensin receptor blocker; CCB, calcium channel blocker.

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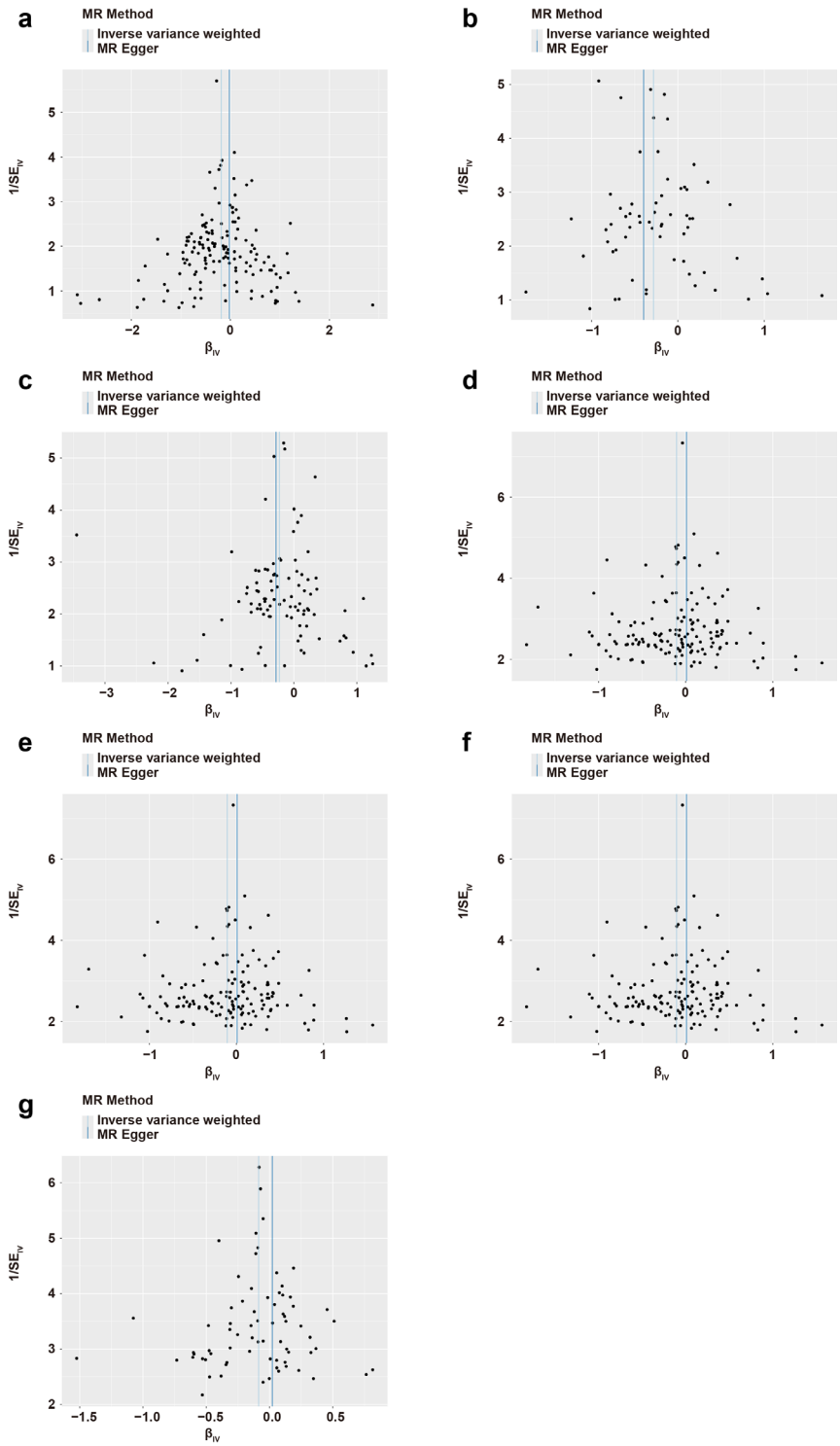

Figure S10 Funnel plot for anti-hypertensive drugs on gastrointestinal cancer. (A) Funnel plot for ACEI/ARB on gastric cancer. (B) Funnel plot for beta-blockers on gastric cancer. (C) Funnel plot for CCB on gastric cancer. (D) Funnel plot for ACEI/ARB on colorectal cancer. (E) Funnel plot for beta-blockers on colorectal cancer. (F) Funnel plot for CCB on colorectal cancer. (G) Funnel plot for diuretics on colorectal cancer. MR, Mendelian randomization; SE, standard error; ACEI/ARB, angiotensin-converting enzyme inhibitor/angiotensin receptor blocker; CCB, calcium channel blocker.

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Table S14 MR results for the association between anti-hypertensive drugs use and cancer risk

Exposure	Outcome	SNPs	MR method	β	SE	OR (95%CI)	P
ACEI/ARB	Gastric cancer	149	IVW	−0.182	0.043	0.834 (0.766, 0.908)	<0.001
			MR Egger (slope test)	−0.021	0.142	0.979 (0.742, 1.293)	0.88
			Weighted median	−0.193	0.062	0.825 (0.730, 0.931)	0.002
			Weighted mode	−0.200	0.103	0.819 (0.669, 1.002)	0.06
			Simple mode	−0.368	0.140	0.692 (0.526, 0.910)	0.009
Beta-blockers	Gastric cancer	63	IVW	−0.283	0.053	0.753 (0.679, 0.836)	<0.001
			MR Egger (slope test)	−0.396	0.175	0.673 (0.477, 0.949)	0.03
			Weighted median	−0.251	0.076	0.778 (0.670, 0.903)	0.001
			Weighted mode	−0.215	0.128	0.807 (0.628, 1.036)	0.10
			Simple mode	−0.251	0.160	0.778 (0.568, 1.065)	0.12
CCB	Gastric cancer	96	IVW	−0.231	0.064	0.794 (0.700, 0.900)	<0.001
			MR Egger (slope test)	−0.284	0.217	0.753 (0.492, 1.151)	0.19
			Weighted median	−0.160	0.064	0.852 (0.752, 0.965)	0.01
			Weighted mode	−0.194	0.106	0.823 (0.669, 1.013)	0.07
			Simple mode	−0.386	0.152	0.680 (0.505, 0.917)	0.01
Diuretics	Gastric cancer	72	IVW	−0.034	0.056	0.966 (0.866, 1.078)	0.54
			MR Egger (slope test)	0.219	0.191	1.245 (0.856, 1.811)	0.26
			Weighted median	0.029	0.084	1.030 (0.874, 1.214)	0.73
			Weighted mode	0.035	0.136	1.035 (0.793, 1.352)	0.80
			Simple mode	0.044	0.171	1.045 (0.747, 1.461)	0.80
Alpha-blockers	Gastric cancer	4	IVW	0.027	0.085	1.027 (0.870, 1.212)	0.75
			MR Egger (slope test)	−0.069	1.104	0.933 (0.107, 8.127)	0.96
			Weighted median	0.028	0.099	1.028 (0.847, 1.247)	0.78
			Weighted mode	0.029	0.110	1.030 (0.830, 1.277)	0.81
			Simple mode	0.038	0.114	1.038 (0.831, 1.298)	0.76
ACEI/ARB	Colorectal cancer	143	IVW	−0.072	0.033	0.931 (0.872, 0.994)	0.03
			MR Egger (slope test)	0.086	0.101	1.076 (0.881, 1.314)	0.47
			Weighted median	−0.045	0.046	0.956 (0.870, 1.050)	0.35
			Weighted mode	−0.037	0.084	0.966 (0.825, 1.130)	0.66
			Simple mode	−0.024	0.118	0.980 (0.775, 1.238)	0.87
Beta-blockers	Colorectal cancer	62	IVW	−0.105	0.042	0.900 (0.829, 0.978)	0.01
			MR Egger (slope test)	0.025	0.133	1.025 (0.790, 1.331)	0.85
			Weighted median	−0.088	0.054	0.916 (0.824, 1.019)	0.11
			Weighted mode	−0.069	0.099	0.933 (0.768, 1.134)	0.49
			Simple mode	−0.126	0.122	0.882 (0.694, 1.120)	0.31
CCB	Colorectal cancer	96	IVW	−0.092	0.035	0.912 (0.851, 0.977)	0.008
			MR Egger (slope test)	−0.033	0.112	0.967 (0.777, 1.204)	0.77
			Weighted median	−0.063	0.045	0.939 (0.859, 1.026)	0.16
			Weighted mode	−0.046	0.070	0.955 (0.834, 1.095)	0.51
			Simple mode	−0.046	0.098	0.955 (0.788, 1.159)	0.64
Diuretics	Colorectal cancer	72	IVW	−0.086	0.038	0.917 (0.851, 0.989)	0.03
			MR Egger (slope test)	0.022	0.116	1.022 (0.815, 1.282)	0.85
			Weighted median	−0.074	0.048	0.929 (0.846, 1.020)	0.12
			Weighted mode	−0.040	0.090	0.961 (0.805, 1.146)	0.66
			Simple mode	0.030	0.101	1.031 (0.846, 1.256)	0.77
Alpha-blockers	Colorectal cancer	4	IVW	−0.044	0.057	0.957 (0.855, 1.071)	0.44
			MR Egger (slope test)	0.333	0.709	1.396 (0.348, 5.599)	0.68
			Weighted median	−0.060	0.067	0.942 (0.826, 1.073)	0.37
			Weighted mode	−0.064	0.085	0.938 (0.794, 1.108)	0.50
			Simple mode	−0.064	0.086	0.938 (0.792, 1.110)	0.51

ACEI/ARB, angiotensin-converting enzyme inhibitor/angiotensin receptor blocker; CCB, calcium channel blocker; MR, Mendelian randomization; SNP, single nucleotide polymorphisms; SE, standard error; OR, odds ratio; CI, confidence interval; IVW, inverse variance weighted.

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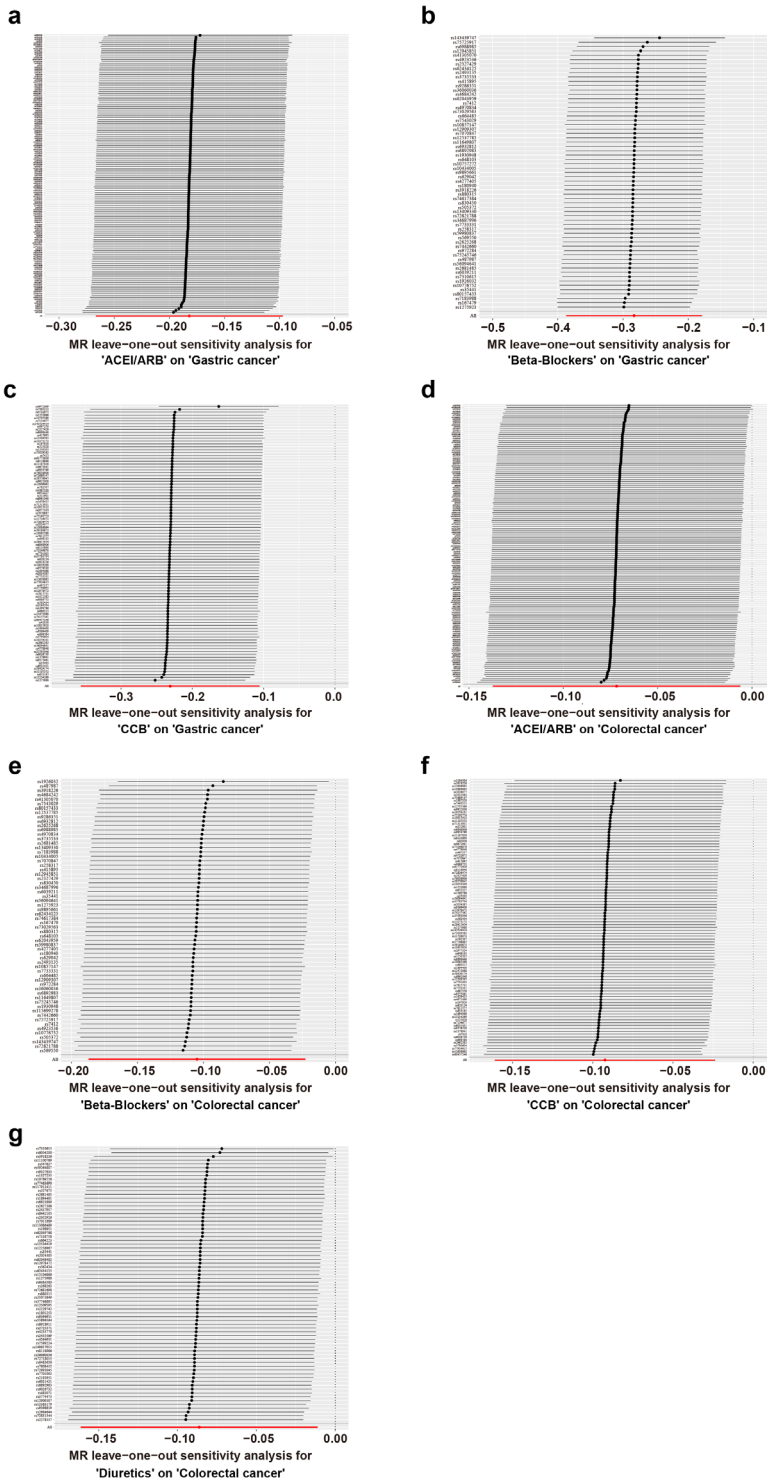

Figure S11 Leave-one-out analysis for anti-hypertensive drugs on gastrointestinal cancer. (A) Leave-one-out analysis for ACEI/ARB on gastric cancer. (B) Leave-one-out analysis for Beta-Blockers on gastric cancer. (C) Leave-one-out analysis for CCB on gastric cancer. (D) Leave-one-out analysis for ACEI/ARB on colorectal cancer. (E) Leave-one-out analysis for Beta-Blockers on colorectal cancer. (F) Leave-one-out analysis for CCB on colorectal cancer. (G) Leave-one-out analysis for diuretics on colorectal cancer. MR, Mendelian randomization; ACEI/ARB, angiotensin-converting enzyme inhibitor/angiotensin receptor blocker; CCB, calcium channel blocker.

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Table S15 MR-RAPS analysis for the findings of this study

Exposure	Outcome	beta.hat	beta.se	beta.p.value	tau2.hat	tau2.se
Hypertension	Gastric cancer	−0.452	0.206	0.03	5×10^{-5}	5×10^{-5}
Hypertension	Colorectal cancer	−0.316	0.166	0.06	7×10^{-5}	4×10^{-5}
Lymphoma	Hypertension	−0.008	0.004	0.03	6×10^{-7}	2×10^{-6}
Thyroid cancer	Hypertension	0.007	0.002	0.003	2×10^{-6}	3×10^{-6}
ACEI/ARB	Gastric cancer	−0.194	0.044	1×10^{-5}	3×10^{-5}	5×10^{-5}
ACEI/ARB	Colorectal cancer	−0.084	0.039	0.03	2×10^{-4}	6×10^{-5}
Beta-blockers	Gastric cancer	−0.268	0.063	2×10^{-5}	2×10^{-4}	1×10^{-4}
Beta-blockers	Colorectal cancer	−0.084	0.045	0.06	1×10^{-4}	8×10^{-5}
CCB	Gastric cancer	−0.165	0.061	0.007	4×10^{-4}	1×10^{-4}
CCB	Colorectal cancer	−0.092	0.035	0.009	8×10^{-5}	5×10^{-5}
Diuretics	Colorectal cancer	−0.076	0.037	0.04	3×10^{-5}	5×10^{-5}

MR-RAPS, Mendelian Randomization-Robust Adjusted Profile Score; ACEI/ARB, angiotensin-converting enzyme inhibitor/angiotensin receptor blocker; CCB, calcium channel blocker.

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