|  |  |
| --- | --- |
| Table S9. Association of six leukocytes traits with five digestive system cancers using univariable Mendelian randomization in European cohort. |  |
| **Outcoms** | **Exposures** | **Method** | **NO. of SNPs** | **Beta** | **Standard Error** | **P-value** | **OR** | **95% CI-low** | **95% CI-up** | **Q** | **Q P-value** | **Intercept P-value** | **Global Test P-value** | **Power** |
| Esophageal cancer | Leukocytes | Inverse variance weighted | 300 | -0.1132  | 0.2320  | 0.6255  | 0.8929  | 0.5667  | 1.4071  | 216.3854  | 0.9999  |  | 0.999 |  |
|  |  | MR Egger | 300 | -0.2278  | 0.5436  | 0.6755  | 0.7963  | 0.2744  | 2.3111  | 216.3311  | 0.9999  | 0.8159  |  |  |
|  |  | Weighted median | 300 | -0.2905  | 0.3712  | 0.4338  | 0.7479  | 0.3613  | 1.5481  |  |  |  |  |  |
|  | Basophils | Inverse variance weighted | 87 | 0.0651  | 0.3671  | 0.8592  | 1.0673  | 0.5198  | 2.1914  | 58.1471  | 0.9908  |  | 0.992 |  |
|  |  | MR Egger | 87 | -0.6095  | 0.7120  | 0.3944  | 0.5436  | 0.1347  | 2.1947  | 56.9245  | 0.9917  | 0.2720  |  |  |
|  |  | Weighted median | 87 | -0.3794  | 0.5587  | 0.4971  | 0.6843  | 0.2289  | 2.0455  |  |  |  |  |  |
|  | Eosinophils | Inverse variance weighted | 299 | -0.0508  | 0.2077  | 0.8067  | 0.9505  | 0.6326  | 1.4280  | 229.5601  | 0.9988  |  | 0.998 |  |
|  |  | MR Egger | 299 | -0.2212  | 0.4731  | 0.6404  | 0.8015  | 0.3171  | 2.0260  | 229.3994  | 0.9986  | 0.6888  |  |  |
|  |  | Weighted median | 299 | -0.1940  | 0.3355  | 0.5632  | 0.8237  | 0.4267  | 1.5899  |  |  |  |  |  |
|  | Lymphocytes | Inverse variance weighted | 301 | -0.1288  | 0.2184  | 0.5552  | 0.8791  | 0.5730  | 1.3488  | 218.3951  | 0.9999  |  | 0.996 |  |
|  |  | MR Egger | 301 | -0.4037  | 0.5142  | 0.4330  | 0.6678  | 0.2438  | 1.8296  | 218.7438  | 0.9999  | 0.5553  |  |  |
|  |  | Weighted median | 301 | -0.2634  | 0.3603  | 0.4648  | 0.7684  | 0.3792  | 1.5572  |  |  |  |  |  |
|  | Monocytes | Inverse variance weighted | 389 | -0.1307  | 0.1698  | 0.4413  | 0.8775  | 0.6291  | 1.2239  | 277.9551  | 1.0000  |  | 0.998 |  |
|  |  | MR Egger | 389 | -0.2454  | 0.3041  | 0.4203  | 0.7824  | 0.4311  | 1.4202  | 278.1614  | 1.0000  | 0.6499  |  |  |
|  |  | Weighted median | 389 | -0.3753  | 0.2894  | 0.1946  | 0.6871  | 0.3897  | 1.2115  |  |  |  |  |  |
|  | Neutrophils | Inverse variance weighted | 231 | -0.1550  | 0.2557  | 0.5445  | 0.8565  | 0.5189  | 1.4136  | 162.3793  | 0.9997  |  | 0.999 |  |
|  |  | MR Egger | 231 | -0.1110  | 0.5822  | 0.8490  | 0.8950  | 0.2859  | 2.8013  | 162.3864  | 0.9998  | 0.9330  |  |  |
|  |  | Weighted median | 231 | -0.2911  | 0.4112  | 0.4790  | 0.7474  | 0.3338  | 1.6735  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Gastric cancer | Leukocytes | Inverse variance weighted | 289 | -0.0337  | 0.1444  | 0.8156  | 0.9669  | 0.7285  | 1.2832  | 230.2489  | 0.9948  |  | 0.996 |  |
|  |  | MR Egger | 289 | -0.0476  | 0.3420  | 0.8894  | 0.9535  | 0.4878  | 1.8639  | 230.2469  | 0.9941  | 0.9642  |  |  |
|  |  | Weighted median | 289 | 0.0698  | 0.2297  | 0.7611  | 1.0723  | 0.6836  | 1.6821  |  |  |  |  |  |
|  | Basophils | Inverse variance weighted | 84 | 0.0648  | 0.2325  | 0.7803  | 1.0670  | 0.6765  | 1.6829  | 63.9720  | 0.9400  |  | 0.95 |  |
|  |  | MR Egger | 84 | 0.7203  | 0.4653  | 0.1255  | 2.0550  | 0.8256  | 5.1153  | 61.3271  | 0.9574  | 0.1077  |  |  |
|  |  | Weighted median | 84 | 0.4197  | 0.3654  | 0.2507  | 1.5216  | 0.7434  | 3.1142  |  |  |  |  |  |
|  | Eosinophils | Inverse variance weighted | 287 | -0.0312  | 0.1265  | 0.8048  | 0.9692  | 0.7565  | 1.2418  | 219.3246  | 0.9987  |  | 0.996 |  |
|  |  | MR Egger | 287 | 0.0338  | 0.2834  | 0.9051  | 1.0344  | 0.5936  | 1.8025  | 219.2588  | 0.9985  | 0.7977  |  |  |
|  |  | Weighted median | 287 | -0.1374  | 0.1970  | 0.4856  | 0.8716  | 0.5924  | 1.2825  |  |  |  |  |  |
|  | Lymphocytes | Inverse variance weighted | 300 | -0.1214  | 0.1337  | 0.3638  | 0.8857  | 0.6815  | 1.1510  | 249.0081  | 0.9840  |  | 0.984 |  |
|  |  | MR Egger | 300 | -0.2129  | 0.3140  | 0.4983  | 0.8082  | 0.4368  | 1.4956  | 248.9044  | 0.9824  | 0.7477  |  |  |
|  |  | Weighted median | 300 | -0.0359  | 0.2169  | 0.8686  | 0.9647  | 0.6306  | 1.4759  |  |  |  |  |  |
|  | Monocytes | Inverse variance weighted | 390 | -0.0895  | 0.1037  | 0.3883  | 0.9144  | 0.7462  | 1.1205  | 332.7043  | 0.9822  |  | 0.976 |  |
|  |  | MR Egger | 390 | -0.0790  | 0.1872  | 0.6734  | 0.9241  | 0.6403  | 1.3336  | 332.6997  | 0.9805  | 0.9462  |  |  |
|  |  | Weighted median | 390 | -0.1763  | 0.1796  | 0.3264  | 0.8384  | 0.5896  | 1.1922  |  |  |  |  |  |
|  | Neutrophils | Inverse variance weighted | 223 | -0.0593  | 0.1591  | 0.7092  | 0.9424  | 0.6899  | 1.2872  | 181.1295  | 0.9768  |  | 0.976 |  |
|  |  | MR Egger | 223 | -0.0833  | 0.3692  | 0.8217  | 0.9201  | 0.4463  | 1.8970  | 181.1347  | 0.9794  | 0.9427  |  |  |
|  |  | Weighted median | 223 | -0.0012  | 0.2550  | 0.9964  | 0.9988  | 0.6060  | 1.6464  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Colorectal cancer | Leukocytes | Inverse variance weighted | 298 | -0.0940  | 0.0680  | 0.1670  | 0.9103  | 0.7967  | 1.0401  | 241.7865  | 0.9917  |  | 0.988 |  |
|  |  | MR Egger | 298 | -0.5120  | 0.1624  | 0.0018  | 0.5993  | 0.4359  | 0.8239  | 233.7545  | 0.9969  | 0.0049  |  |  |
|  |  | Weighted median | 298 | -0.1208  | 0.1061  | 0.2547  | 0.8862  | 0.7199  | 1.0910  |  |  |  |  |  |
|  | Basophils | Inverse variance weighted | 82 | 0.1689  | 0.1075  | 0.1162  | 1.1840  | 0.9590  | 1.4618  | 58.0316  | 0.9748  |  | 0.968 |  |
|  |  | MR Egger | 82 | 0.0171  | 0.2087  | 0.9349  | 1.0172  | 0.6757  | 1.5315  | 57.3117  | 0.9741  | 0.3987  |  |  |
|  |  | Weighted median | 82 | 0.2741  | 0.1839  | 0.1360  | 1.3154  | 0.9173  | 1.8862  |  |  |  |  |  |
|  | Eosinophils | Inverse variance weighted | 295 | -0.1490  | 0.0599  | 0.0128  | 0.8615  | 0.7662  | 0.9688  | 259.5116  | 0.9271  |  | 0.936 | 0.72 |
|  |  | MR Egger | 295 | -0.0563  | 0.1374  | 0.6822  | 0.9452  | 0.7221  | 1.2374  | 258.9496  | 0.9247  | 0.4541  |  |  |
|  |  | Weighted median | 295 | -0.1721  | 0.0966  | 0.0747  | 0.8419  | 0.6967  | 1.0173  |  |  |  |  |  |
|  | Lymphocytes | Inverse variance weighted | 288 | -0.0752  | 0.0643  | 0.2416  | 0.9275  | 0.8177  | 1.0520  | 236.6908  | 0.9848  |  | 0.986 |  |
|  |  | MR Egger | 288 | -0.1846  | 0.1523  | 0.2264  | 0.8314  | 0.6169  | 1.1206  | 237.3183  | 0.9853  | 0.4289  |  |  |
|  |  | Weighted median | 288 | -0.0886  | 0.1077  | 0.4105  | 0.9152  | 0.7411  | 1.1302  |  |  |  |  |  |
|  | Monocytes | Inverse variance weighted | 371 | -0.0304  | 0.0497  | 0.5402  | 0.9700  | 0.8801  | 1.0692  | 271.8783  | 1.0000  |  | 0.998 |  |
|  |  | MR Egger | 371 | -0.0237  | 0.0885  | 0.7886  | 0.9765  | 0.8211  | 1.1614  | 271.8866  | 1.0000  | 0.9273  |  |  |
|  |  | Weighted median | 371 | -0.0392  | 0.0822  | 0.6338  | 0.9616  | 0.8184  | 1.1298  |  |  |  |  |  |
|  | Neutrophils | Inverse variance weighted | 225 | -0.0715  | 0.0762  | 0.3483  | 0.9310  | 0.8019  | 1.0810  | 197.4282  | 0.8992  |  | 0.936 |  |
|  |  | MR Egger | 225 | -0.2882  | 0.1776  | 0.1061  | 0.7496  | 0.5292  | 1.0618  | 195.6033  | 0.9070  | 0.1781  |  |  |
|  |  | Weighted median | 225 | -0.1022  | 0.1203  | 0.3959  | 0.9029  | 0.7132  | 1.1431  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Hepatocarcinoma | Leukocytes | Inverse variance weighted | 295 | 0.0361  | 0.2041  | 0.8597  | 1.0367  | 0.6949  | 1.5468  | 232.0259  | 0.9964  |  | 1 |  |
|  |  | MR Egger | 295 | -0.2603  | 0.4782  | 0.5866  | 0.7708  | 0.3019  | 1.9680  | 232.4956  | 0.9966  | 0.4937  |  |  |
|  |  | Weighted median | 295 | 0.1487  | 0.3228  | 0.6450  | 1.1603  | 0.6164  | 2.1844  |  |  |  |  |  |
|  | Basophils | Inverse variance weighted | 85 | -0.1734  | 0.3196  | 0.5874  | 0.8408  | 0.4494  | 1.5731  | 75.1494  | 0.7442  |  | 0.782 |  |
|  |  | MR Egger | 85 | 0.1548  | 0.6209  | 0.8038  | 1.1674  | 0.3457  | 3.9423  | 74.7693  | 0.7288  | 0.5392  |  |  |
|  |  | Weighted median | 85 | -0.2790  | 0.5455  | 0.6089  | 0.7565  | 0.2597  | 2.2035  |  |  |  |  |  |
|  | Eosinophils | Inverse variance weighted | 292 | -0.1680  | 0.1846  | 0.3629  | 0.8454  | 0.5887  | 1.2139  | 234.1475  | 0.9938  |  | 0.992 |  |
|  |  | MR Egger | 292 | -0.1740  | 0.4270  | 0.6840  | 0.8403  | 0.3639  | 1.9406  | 234.1472  | 0.9930  | 0.9876  |  |  |
|  |  | Weighted median | 292 | 0.0073  | 0.2854  | 0.9796  | 1.0073  | 0.5757  | 1.7625  |  |  |  |  |  |
|  | Lymphocytes | Inverse variance weighted | 289 | -0.0995  | 0.1942  | 0.6085  | 0.9053  | 0.6187  | 1.3246  | 180.6711  | 1.0000  |  | 1 |  |
|  |  | MR Egger | 289 | -0.6667  | 0.4540  | 0.1430  | 0.5134  | 0.2109  | 1.2499  | 178.7600  | 1.0000  | 0.1679  |  |  |
|  |  | Weighted median | 289 | -0.3116  | 0.3282  | 0.3424  | 0.7323  | 0.3849  | 1.3932  |  |  |  |  |  |
|  | Monocytes | Inverse variance weighted | 379 | -0.1790  | 0.1492  | 0.2303  | 0.8361  | 0.6241  | 1.1202  | 272.3722  | 1.0000  |  | 0.999 |  |
|  |  | MR Egger | 379 | -0.0782  | 0.2689  | 0.7714  | 0.9248  | 0.5460  | 1.5664  | 272.1691  | 1.0000  | 0.6525  |  |  |
|  |  | Weighted median | 379 | -0.1893  | 0.2516  | 0.4519  | 0.8276  | 0.5054  | 1.3551  |  |  |  |  |  |
|  | Neutrophils | Inverse variance weighted | 224 | -0.1425  | 0.2270  | 0.5301  | 0.8672  | 0.5557  | 1.3531  | 177.9444  | 0.9882  |  | 0.991 |  |
|  |  | MR Egger | 224 | 0.2180  | 0.5111  | 0.6702  | 1.2436  | 0.4567  | 3.3867  | 177.3247  | 0.9878  | 0.4320  |  |  |
|  |  | Weighted median | 224 | 0.4085  | 0.3589  | 0.2550  | 1.5045  | 0.7446  | 3.0400  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Pancreatic cancer | Leukocytes | Inverse variance weighted | 295 | -0.0171  | 0.1489  | 0.9086  | 0.9831  | 0.7342  | 1.3163  | 220.0720  | 0.9996  |  | 1 |  |
|  |  | MR Egger | 295 | 0.0050  | 0.3597  | 0.9890  | 1.0050  | 0.4965  | 2.0340  | 220.0675  | 0.9995  | 0.9463  |  |  |
|  |  | Weighted median | 295 | 0.1303  | 0.2307  | 0.5722  | 1.1392  | 0.7248  | 1.7904  |  |  |  |  |  |
|  | Basophils | Inverse variance weighted | 88 | -0.1178  | 0.2272  | 0.6040  | 0.8889  | 0.5694  | 1.3874  | 65.0409  | 0.9623  | 0.8231  | 0.974 |  |
|  |  | MR Egger | 88 | -0.2029  | 0.4422  | 0.6476  | 0.8164  | 0.3431  | 1.9424  | 64.9906  | 0.9557  |  |  |  |
|  |  | Weighted median | 88 | -0.0456  | 0.3671  | 0.9011  | 0.9554  | 0.4653  | 1.9618  |  |  |  |  |  |
|  | Eosinophils | Inverse variance weighted | 291 | 0.0399  | 0.1298  | 0.7585  | 1.0407  | 0.8069  | 1.3423  | 239.4022  | 0.9864  | 0.5732  | 0.988 |  |
|  |  | MR Egger | 291 | 0.1864  | 0.2904  | 0.5215  | 1.2049  | 0.6819  | 2.1291  | 239.0842  | 0.9854  |  |  |  |
|  |  | Weighted median | 291 | -0.1216  | 0.2125  | 0.5671  | 0.8855  | 0.5839  | 1.3430  |  |  |  |  |  |
|  | Lymphocytes | Inverse variance weighted | 294 | -0.0428  | 0.1376  | 0.7559  | 0.9581  | 0.7317  | 1.2547  | 226.6335  | 0.9984  | 0.6918  | 1 |  |
|  |  | MR Egger | 294 | -0.1578  | 0.3208  | 0.6232  | 0.8541  | 0.4555  | 1.6015  | 226.4760  | 0.9982  |  |  |  |
|  |  | Weighted median | 294 | -0.1868  | 0.2243  | 0.4050  | 0.8296  | 0.5345  | 1.2877  |  |  |  |  |  |
|  | Monocytes | Inverse variance weighted | 383 | 0.0706  | 0.1088  | 0.5161  | 1.0732  | 0.8672  | 1.3281  | 277.7842  | 1.0000  | 0.9896  | 1 |  |
|  |  | MR Egger | 383 | 0.0684  | 0.1992  | 0.7314  | 1.0708  | 0.7246  | 1.5824  | 277.7840  | 1.0000  |  |  |  |
|  |  | Weighted median | 383 | -0.1181  | 0.1801  | 0.5118  | 0.8886  | 0.6243  | 1.2647  |  |  |  |  |  |
|  | Neutrophils | Inverse variance weighted | 229 | 0.0226  | 0.1647  | 0.8907  | 1.0229  | 0.7407  | 1.4126  | 157.6100  | 0.9999  | 0.6165  | 1 |  |
|  |  | MR Egger | 229 | 0.1970  | 0.3848  | 0.6091  | 1.2178  | 0.5728  | 2.5889  | 157.3586  | 0.9999  |  |  |  |
|  |  | Weighted median | 229 | 0.1376  | 0.2494  | 0.5810  | 1.1476  | 0.7038  | 1.8710  |  |  |  |  |  |
| Abbreviations: CI, Confidence interval; NO.: Number; OR, Odds Ratio; Q, Cochran Q statistics; SNPs, single nucleotide polymorphisms. |
| OR and 95% CI represent change in odds ratio of cancers per 1 SD increase in of each blood leukocyte subtypes. |