**Table S3** Top 20 comorbidities of patients without asthma (A) and with asthma (B) according to sex

**(A)**

|  |  |
| --- | --- |
|  | **Sex** |
|  | **Male (N = 552,106)** | **Female (N = 921,916)** |
| **1** | URI | 218,377 | 39.55  | URI | 424,854 | 46.08  |
| **2** | Vasomotor and allergic rhinitis | 209,124 | 38.74 | Vasomotor and allergic rhinitis | 408,125 | 45.28 |
| **3** | Bronchitis | 203,953 | 36.94  | Bronchitis | 403,855 | 43.81  |
| **4** | HTN | 202,135 | 37.45 | HTN | 289,352 | 32.10 |
| **5** | Dyslipidemia | 161,054 | 29.84 | Dyslipidemia | 265,415 | 29.45 |
| **6** | GERD | 139,047 | 25.76 | GERD | 257,514 | 28.57 |
| **7** | DM | 111,170 | 20.60 | Contact Dermatitis | 199,002 | 21.59  |
| **8** | Contact Dermatitis | 99,715 | 18.06  | Conjunctivitis | 198,606 | 21.54  |
| **9** | Conjunctivitis | 90,188 | 16.34  | Functional intestinal disorders | 151,123 | 16.39  |
| **10** | BPH | 89,704 | 16.25  | Gastric ulcer | 144,368 | 15.66  |
| **11** | Functional intestinal disorders | 82,475 | 14.94  | DM | 142,755 | 15.84 |
| **12** | Gastric ulcer | 80,721 | 14.62  | Osteoporosis | 132,842 | 14.74 |
| **13** | Irritable bowel syndrome | 60,551 | 10.97  | Keratitis | 129,607 | 14.05  |
| **14** | Keratitis | 57,426 | 10.40  | Arthritis | 111,130 | 12.05  |
| **15** | Glaucoma | 55,540 | 10.05  | Irritable bowel syndrome | 105,005 | 11.39  |
| **16** | Arthritis | 52,811 | 9.56  | Anxiety disorders | 97,034 | 10.77 |
| **17** | Cerebrovascular disease | 50,385 | 8.92  | Glaucoma | 97,007 | 10.52  |
| 18 | Cataract | 49,222 | 8.92  | Urticaria | 96,427 | 10.46  |
| 19 | Urticaria | 49,031 | 8.89  | Cystitis | 93,702 | 10.16  |
| 20 | Anxiety disorders | 40,941 | 7.58 | Cataract | 83,414 | 9.05  |
|  |  |  |  |  |  |  |

\* n, %

URI: Upper respiratory infection, HTN: hypertension, GERD: Gastroesophageal reflux disease, DM: diabetes mellitus; BPH: benign prostatic hyperplasia

(B)

|  |  |
| --- | --- |
|  | **Sex** |
|  | **Male (N = 637,934)** | **Female (N = 1,004,832)** |
| 1 | Vasomotor and allergic rhinitis |  507,432 | 82.46 | Vasomotor and allergic rhinitis | 826,551 | 85.43 |
| 2 | Bronchitis |  505,683  | 79.27  | Bronchitis |  850,392  | 84.63  |
| 3 | URI |  477,810  | 74.90  | URI |  819,697  | 81.58  |
| 4 | GERD |  267,357 | 43.44 | GERD | 456,743 | 47.21 |
| 5 | HTN |  238,313 | 38.73 | HTN | 347,770 | 35.94 |
| 6 | Dyslipidemia |  210,104  | 32.94  | Dyslipidemia | 344,264 | 35.58 |
| 7 | Contact Dermatitis |  183,176  | 28.71  | Contact Dermatitis |  311,390  | 30.99  |
| 8 | Conjunctivitis |  156,209  | 24.49  | Conjunctivitis |  308,383  | 30.69  |
| 9 | Gastric ulcer |  154,121  | 24.16  | Gastric ulcer |  263,333  | 26.21  |
| 10 | BPH |  145,700  | 22.84  | Functional intestinal disorders |  235,106  | 23.40  |
| 11 | Functional intestinal disorders |  142,411  | 22.32  | DM | 181,170 | 18.73 |
| 12 | DM |  134,496 | 21.86 | Urticaria |  189,576  | 18.87  |
| 13 | COPD |  120,090 | 19.51 | Arthritis |  188,675  | 18.78  |
| 14 | Chronic Bronchitis |  122,702  | 19.23  | Keratitis |  185,666  | 18.48  |
| 15 | Pneumonia |  108,072 | 17.56 | Osteoporosis | 176,426 | 18.23 |
| 16 | Irritable bowel syndrome |  109,659  | 17.19  | Irritable bowel syndrome |  178,412  | 17.76  |
| 17 | Urticaria |  107,048  | 16.78  | Anxiety disorders | 166,145 | 17.17 |
| 18 | Chronic sinusitis |  99,769  | 15.64  | Pneumonia | 162,442 | 16.79 |
| 19 | Arthritis |  90,468  | 14.18  | Chronic sinusitis |  167,398  | 16.66  |
| 20 | Keratitis |  89,145  | 13.97  | Chronic bronchitis |  163,457  | 16.27  |

\* n, %

URI: Upper respiratory infection, HTN: hypertension, GERD: Gastroesophageal reflux disease, DM: diabetes mellitus, BPH: benign prostatic hyperplasia