

SUPPLEMENTARY DATA

Table A Descriptive and Logistic Regression Results on symptoms level under Immune system disorders (year 1990 to 2014) “Count and Percentage” is the total number of occurrences of the symptom with its percentage in the total occurrence of this SOC. “Sex” and “AGE2, 3, 4” are the odds ratios (OR) of the risks for having AEs of male patients and age group 2, 3, 4 comparing to the reference group respectively; “N/A” means the p value of the cell is larger or equal than 0.0015 (0.05 / 33).

| Symptom | Count and Percentage | Sex | AGE2 | AGE3 | AGE4 |
|--------------------------------------|----------------------|-------|-------|-------|-------|
| Urticaria | 225, 10.9% | N/A | N/A | N/A | 0.401 |
| Asthma | 130, 6.3% | N/A | N/A | 0.383 | N/A |
| Demyelinating polyneuropathy | 56, 2.7% | 2.744 | N/A | N/A | N/A |
| Acute disseminated encephalomyelitis | 43, 2.1% | N/A | 0.205 | 0.193 | N/A |

Table B Descriptive and Logistic Regression Results on symptoms level under Blood and lymphatic system disorders (year 1990 to 2014) “Count and Percentage” is the total number of occurrences of the symptom with its percentage in the total occurrence of this SOC. “Sex” and “AGE2, 3, 4” are the odds ratios (OR) of the risks for having AEs of male patients and age group 2, 3, 4 comparing to the reference group respectively; “N/A” means the p value of the cell is larger or equal than 0.0028 (0.05 / 18).

| Symptom | Count and Percentage | Sex | AGE2 | AGE3 | AGE4 |
|------------------|-----------------------------|------------|-------------|-------------|-------------|
| Anaemia | 138, 14.2% | N/A | N/A | N/A | 2.59 |
| Petechiae | 78, 8.0% | N/A | 0.342 | 0.335 | 0.158 |

Table C Descriptive and Logistic Regression Results on symptoms level under Cardiac disorders (year 1990 to 2014) “Count and Percentage” is the total number of occurrences of the symptom with its percentage in the total occurrence of this SOC. “Sex” and “AGE2, 3, 4” are the odds ratios (OR) of the risks for having AEs of male patients and age group 2, 3, 4 comparing to the reference group respectively; “N/A” means the p value of the cell is larger or equal than 0.0016 (0.05 / 31).

| Symptom | Count and Percentage | Sex | AGE2 | AGE3 | AGE4 |
|-------------------------|-----------------------------|------------|-------------|-------------|-------------|
| Dyspnoea | 1014, 30.8% | 0.687 | 2.112 | N/A | N/A |
| Chest pain | 402, 12.2% | N/A | 4.515 | 4.286 | N/A |
| Tachycardia | 203, 6.2% | N/A | N/A | N/A | 0.255 |
| Chest discomfort | 171, 5.2% | 0.53 | 13.63 | 12.45 | N/A |
| Palpitations | 86, 2.6% | 0.317 | N/A | N/A | N/A |
| Cyanosis | 71, 2.2% | N/A | 0.092 | 0.104 | 0.09 |
| Bradycardia | 55, 1.7% | N/A | 0.227 | N/A | N/A |
| Myocarditis | 35, 1.1% | 6.289 | N/A | N/A | N/A |

Table D Descriptive and Logistic Regression Results on symptoms level under Vascular disorders (year 1990 to 2014) “Count” is the total number of occurrences of the symptom. “Gender” and “AGE2, 3, 4” are the odds ratios (OR) of the risks for having AEs of male patients and age group 2, 3, 4 comparing to the reference group respectively; “N/A” means the p value of the cell is larger or equal than 0.0019 (0.05 / 26)).

| Symptom | Counts | Gender | AGE2 | AGE3 | AGE4 |
|---------------------|---------------|---------------|-------------|-------------|-------------|
| Hypertension | 284 | N/A | 3.502 | 6.227 | 4.439 |
| Pallor | 117 | N/A | 0.36 | 0.215 | 0.282 |
| Contusion | 69 | N/A | 0.3 | 0.188 | 0.188 |

Table E The pairwise correlation coefficients matrix of SOC_s determined by Spearman's method

| | SOC1 | SOC2 | SOC3 | SOC4 | SOC5 | SOC6 | SOC7 | SOC8 | SOC9 | SOC10 | SOC11 | SOC12 | SOC13 | SOC14 | SOC15 | SOC16 | SOC17 | SOC18 | SOC19 | SOC20 | SOC21 | SOC22 | SOC23 | SOC24 | SOC25 | SOC26 |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| SOC1 | 1 | 0.098 | 0.087 | -0.085 | 0.065 | 0.152 | 0.039 | 0.168 | -0.008 | 0.064 | -0.039 | 0.047 | 0.151 | 0.074 | 0.058 | 0.004 | 0.136 | 0.126 | -0.044 | 0.021 | 0.016 | 0.161 | 0.141 | 0.07 | 0.212 | 0.116 |
| SOC2 | 0.098 | 1 | 0.052 | -0.041 | 0.063 | 0.021 | 0.009 | 0.066 | -0.009 | 0.009 | -0.029 | 0.042 | 0.002 | 0.001 | 0.029 | -0.025 | 0.008 | 0.066 | -0.011 | 0.021 | -0.004 | -0.022 | -0.021 | 0.002 | 0.01 | -0.004 |
| SOC3 | 0.087 | 0.052 | 1 | 0.028 | 0.119 | 0.183 | 0.055 | -0.036 | 0.015 | -0.009 | 0.033 | 0.201 | 0.089 | 0.107 | 0.133 | 0.103 | 0.085 | 0.152 | 0.001 | 0.044 | -0.006 | 0.117 | 0.174 | 0.013 | 0.077 | 0.027 |
| SOC4 | -0.085 | -0.041 | 0.028 | 1 | 0.035 | 0.07 | 0.072 | 0.015 | 0.135 | 0.038 | 0.093 | 0.053 | 0.095 | 0.059 | 0.014 | 0.193 | 0.058 | 0.065 | -0.018 | 0.04 | -0.009 | 0.034 | 0.074 | 0.003 | 0.033 | 0.038 |
| SOC5 | 0.065 | 0.063 | 0.119 | 0.035 | 1 | 0.179 | 0.112 | 0.102 | 0.014 | 0.037 | 0.059 | 0.137 | 0.086 | 0.092 | 0.046 | 0.024 | 0.068 | 0.135 | -0.017 | 0.038 | -0.003 | 0.065 | 0.144 | 0.051 | 0.1 | 0.09 |
| SOC6 | 0.152 | 0.021 | 0.183 | 0.07 | 0.179 | 1 | 0.16 | 0.088 | 0.044 | 0.055 | 0.12 | 0.193 | 0.166 | 0.194 | 0.086 | 0.15 | 0.169 | 0.198 | -0.012 | 0.076 | -0.007 | 0.201 | 0.242 | 0.059 | 0.172 | 0.079 |
| SOC7 | 0.039 | 0.009 | 0.055 | 0.072 | 0.112 | 0.16 | 1 | 0.247 | 0.104 | 0.101 | 0.091 | 0.129 | 0.136 | 0.156 | 0.01 | 0.035 | 0.092 | 0.1 | -0.032 | 0.056 | 0.014 | 0.101 | 0.202 | 0.071 | 0.109 | 0.124 |
| SOC8 | 0.168 | 0.066 | -0.036 | 0.015 | 0.102 | 0.088 | 0.247 | 1 | 0.113 | 0.101 | -0.049 | 0.074 | 0.02 | 0.157 | 0.007 | -0.108 | 0.233 | 0.141 | -0.065 | 0.031 | -0.002 | 0.075 | 0.374 | 0.155 | 0.302 | 0.22 |
| SOC9 | -0.008 | -0.009 | 0.015 | 0.135 | 0.014 | 0.044 | 0.104 | 0.113 | 1 | 0.091 | 0.063 | 0.066 | 0.08 | 0.096 | 0 | 0.067 | 0.054 | 0.025 | -0.001 | -0.005 | -0.003 | 0.033 | 0.075 | 0.01 | 0.03 | 0.045 |
| SOC10 | 0.064 | 0.009 | -0.009 | 0.038 | 0.037 | 0.055 | 0.101 | 0.101 | 0.091 | 1 | 0.011 | 0.053 | 0.084 | 0.102 | -0.001 | 0.042 | 0.058 | 0.037 | -0.011 | 0.007 | -0.002 | 0.039 | 0.068 | 0.03 | 0.045 | 0.055 |
| SOC11 | -0.039 | -0.029 | 0.033 | 0.093 | 0.059 | 0.12 | 0.091 | -0.049 | 0.063 | 0.011 | 1 | 0.197 | 0.304 | 0.098 | 0.056 | 0.045 | 0.029 | 0.068 | -0.034 | 0.043 | -0.01 | 0.046 | 0.092 | -0.018 | 0.059 | 0.02 |
| SOC12 | 0.047 | 0.042 | 0.201 | 0.053 | 0.137 | 0.193 | 0.129 | 0.074 | 0.066 | 0.053 | 0.197 | 1 | 0.129 | 0.158 | 0.07 | 0.098 | 0.094 | 0.156 | 0.011 | 0.068 | -0.007 | 0.078 | 0.159 | 0.077 | 0.146 | 0.066 |
| SOC13 | 0.151 | 0.002 | 0.089 | 0.095 | 0.086 | 0.166 | 0.136 | 0.02 | 0.08 | 0.084 | 0.304 | 0.129 | 1 | 0.116 | 0.04 | 0.056 | 0.042 | 0.091 | -0.016 | 0.016 | 0.011 | 0.123 | 0.122 | 0.03 | 0.128 | 0.059 |
| SOC14 | 0.074 | 0.001 | 0.107 | 0.059 | 0.092 | 0.194 | 0.156 | 0.157 | 0.096 | 0.102 | 0.098 | 0.158 | 0.116 | 1 | 0.078 | 0.085 | 0.156 | 0.128 | -0.02 | 0.025 | -0.01 | 0.174 | 0.205 | 0.052 | 0.138 | 0.098 |
| SOC15 | 0.058 | 0.029 | 0.133 | 0.014 | 0.046 | 0.086 | 0.01 | 0.007 | 0 | -0.001 | 0.056 | 0.07 | 0.04 | 0.078 | 1 | 0.021 | 0.046 | 0.118 | 0.006 | -0.008 | -0.002 | 0.052 | 0.072 | 0.014 | 0.058 | 0.012 |
| SOC16 | 0.004 | -0.025 | 0.103 | 0.193 | 0.024 | 0.15 | 0.035 | -0.108 | 0.067 | 0.042 | 0.045 | 0.098 | 0.056 | 0.085 | 0.021 | 1 | 0.098 | 0.002 | -0.029 | 0.014 | -0.008 | 0.233 | 0.072 | -0.005 | -0.03 | -0.005 |
| SOC17 | 0.136 | 0.008 | 0.085 | 0.058 | 0.068 | 0.169 | 0.092 | 0.233 | 0.054 | 0.058 | 0.029 | 0.094 | 0.042 | 0.156 | 0.046 | 0.098 | 1 | 0.111 | -0.035 | 0.055 | -0.01 | 0.312 | 0.269 | 0.091 | 0.148 | 0.178 |
| SOC18 | 0.126 | 0.066 | 0.152 | 0.065 | 0.135 | 0.198 | 0.1 | 0.141 | 0.025 | 0.037 | 0.068 | 0.156 | 0.091 | 0.128 | 0.118 | 0.002 | 0.111 | 1 | -0.001 | 0.096 | -0.004 | 0.094 | 0.202 | 0.057 | 0.182 | 0.081 |
| SOC19 | -0.044 | -0.011 | 0.001 | -0.018 | -0.017 | -0.012 | -0.032 | -0.065 | -0.001 | -0.011 | -0.034 | 0.011 | -0.016 | -0.02 | 0.006 | -0.029 | -0.035 | -0.001 | 1 | 0.061 | -0.002 | -0.044 | 0 | -0.004 | 0.022 | -0.01 |
| SOC20 | 0.021 | 0.021 | 0.044 | 0.04 | 0.038 | 0.076 | 0.056 | 0.031 | -0.005 | 0.007 | 0.043 | 0.068 | 0.016 | 0.025 | -0.008 | 0.014 | 0.055 | 0.096 | 0.061 | 1 | -0.001 | 0.038 | 0.068 | 0.037 | 0.072 | 0.062 |
| SOC21 | 0.016 | -0.004 | -0.006 | -0.009 | -0.003 | -0.007 | 0.014 | -0.002 | -0.003 | -0.002 | -0.01 | -0.007 | 0.011 | -0.01 | -0.002 | -0.008 | -0.01 | -0.004 | -0.002 | -0.001 | 1 | 0.007 | -0.002 | -0.004 | -0.007 | -0.004 |
| SOC22 | 0.161 | -0.022 | 0.117 | 0.034 | 0.065 | 0.201 | 0.101 | 0.075 | 0.033 | 0.039 | 0.046 | 0.078 | 0.123 | 0.174 | 0.052 | 0.233 | 0.312 | 0.094 | -0.044 | 0.038 | 0.007 | 1 | 0.212 | 0.041 | 0.105 | 0.101 |
| SOC23 | 0.141 | -0.021 | 0.174 | 0.074 | 0.144 | 0.242 | 0.202 | 0.374 | 0.075 | 0.068 | 0.092 | 0.159 | 0.122 | 0.205 | 0.072 | 0.072 | 0.269 | 0.202 | 0 | 0.068 | -0.002 | 0.212 | 1 | 0.129 | 0.388 | 0.206 |
| SOC24 | 0.07 | 0.002 | 0.013 | 0.003 | 0.051 | 0.059 | 0.071 | 0.155 | 0.01 | 0.03 | -0.018 | 0.077 | 0.03 | 0.052 | 0.014 | -0.005 | 0.091 | 0.057 | -0.004 | 0.037 | -0.004 | 0.041 | 0.129 | 1 | 0.17 | 0.14 |
| SOC25 | 0.212 | 0.01 | 0.077 | 0.033 | 0.1 | 0.172 | 0.109 | 0.302 | 0.03 | 0.045 | 0.059 | 0.146 | 0.128 | 0.138 | 0.058 | -0.03 | 0.148 | 0.182 | 0.022 | 0.072 | -0.007 | 0.105 | 0.388 | 0.17 | 1 | 0.223 |
| SOC26 | 0.116 | -0.004 | 0.027 | 0.038 | 0.09 | 0.079 | 0.124 | 0.22 | 0.045 | 0.055 | 0.02 | 0.066 | 0.059 | 0.098 | 0.012 | -0.005 | 0.178 | 0.081 | -0.01 | 0.062 | -0.004 | 0.101 | 0.206 | 0.14 | 0.223 | 1 |