**Table S1. The description of sample characteristics by cases vs. controls, (n, %)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Cases** **(n=262)** | **Controls** **(n=262)** | ***p* value** |
| Maternal ethnicity |  |  |  |
| Han  | 251, 95.8 | 255, 97.3 | 0.337 |
| Other  | 11, 4.2 | 7, 2.7 |  |
| Maternal age at delivery |  |  |  |
| <35 years old | 233, 88.9 | 240, 91.6 | 0.302 |
| ≥35 years old | 29, 11.1 | 22, 8.4 |  |
| Maternal education |  |  |  |
| Middle school and below  | 101, 38.5 | 58, 22.1 | <0.001 |
| High school | 62, 23.7 | 48, 18.3 |  |
| College and above | 99, 37.8 | 156, 59.5 |  |
| Marital status |  |  |  |
| Married | 253, 96.6 | 257, 98.1 | 0.279 |
| Unmarried/divorced/widowed | 9, 3.4 | 5, 1.9 |  |
| Residence |  |  |  |
| Urban | 99, 37.8 | 166, 63.4 | <0.001 |
| Suburban /rural  | 163, 62.2 | 96, 36.6 |  |
| Maternal prepregnancy obesity |  |  |  |
| Yes | 17, 6.5 | 9, 3.4 | 0.108 |
| No | 245, 93.5 | 253, 96.6 |  |
| Multiple births |  |  |  |
| Yes | 29, 11.1 | 23, 8.8 | 0.381 |
|  No | 233, 88.9 | 239, 91.2 |  |
| Infant gender |  |  |  |
| Male | 160, 61.1 | 168, 64.1 | 0.470 |
|  Female | 102, 38.9 | 94, 35.9 |  |
| Family history of CHD |  |  |  |
|  Yes  | 11, 4.2 | 6, 2.3 | 0.218 |
|  No | 251, 95.8 | 256, 97.7 |  |
| Diabetes/hypertension  |  |  |  |
| Yes | 8, 3.1 | 7, 2.7 | 0.793 |
| No | 254, 96.9 | 255, 97.3 |  |
| Smoking/drinking |  |  |  |
| Yes | 40, 15.3 | 26, 9.9 | 0.065 |
| No | 222, 84.7 | 236, 90.1 |  |
| Regular folic acid use |  |  |  |
| Yes | 186, 71.0 | 222, 84.7 | <0.001 |
| No | 76, 29.0 | 40, 15.3 |  |
| Regular cod liver oil use |  |  |  |
| Yes | 45, 17.2 | 64, 24.4 | 0.041 |
| No | 217, 82.8 | 198, 75.6 |  |

CHD: congenital heart disease.

**Table S2.** **Associations of the frequency of folic acid and cod liver oil supplementation during periconceptional period with severe CHD in offspring before propensity score matched.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Cases****n, %** | **Controls****n, %** | **Crude OR** **(95% CI)** | ***p* for trend** | **Adjusted OR****(95% CI)** | ***p* for trend** |
| **Folic acid use** |  |  |  |  |  |  |
| occasionally/never | 76, 29.0 | 40, 15.3 | 1 | **0.001** | 1 | **0.020** |
| frequently | 47, 17.9 | 54, 20.6 | **0.458 (0.265-0.792)\*\*** |  | **0.523 (0.293-0.934)\*** |  |
| almost always | 139, 53.1 | 168, 64.1 | **0.435 (0.279-0.679)\*\*\*** |  | **0.533 (0.330-0.860)\*** |  |
| **Cod liver oil use** |  |  |  |  |  |  |
| occasionally/never | 217, 82.8 | 198, 75.6 | 1 | **0.029** | 1 | 0.069 |
| frequently | 16, 6.1 | 18, 6.9 | 0.811 (0.403-1.634) |  | 0.727 (0.348-1.520) |  |
| almost always | 29, 11.1 | 46, 17.6 | **0.575 (0.348-0.951)\*** |  | 0.633 (0.373-1.072) |  |

OR: odds ratio; 95% CI: 95% confidence intervals; CHD: congenital heart disease.

Adjusted for maternal ethnicity, maternal age at delivery, maternal education, marital status, residence, maternal prepregnancy obesity, multiple births, infant gender, family history of CHD, prepregnancy diabetes/hypertension, smoking/drinking.

\* *p* value <0.05; \*\* *p* value <0.01; \*\*\* *p* value <0.001