**Supplemental Materials**

**Assessment of hypertension association with arsenic exposure from food and drinking water in Bihar, India**

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**Table A.1.** Detailed description of variables included in the present study

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable name/code | Description | Original grouping | Grouping/Regrouping/Calculation | Variable type |
| General Hypertension\_reported | Whether participants were reported to have general hypertension | Yes; No  |  | Categorical |
| General Hypertension\_measured | Whether participants were measured to have general hypertension | Yes (systolic blood pressure ≥ 140 mmHg/diastolic blood pressure ≥ 90 mmHg); Otherwise, No  |  | Categorical |
| LDL | Serum low-density lipoprotein level (mg/dL) | Continuous |  | Continuous |
| HDL | Serum high-density lipoprotein level (mg/dL) | Continuous |  | Continuous |
| Astotal | Daily intake of arsenic from both food and drinking water (µg/day) | Continuous | $$As\_{total}=As\_{rice}+As\_{water}+As\_{wheat flour }+As\_{potato}$$ | Continuous |
| Asfood | Daily arsenic intake from food (excluding drinking water) (µg/day) | Continuous | $$As\_{total}=As\_{rice}+As\_{wheat flour }+As\_{potato}$$ | Continuous |
| Asrice | Daily intake of arsenic from cooked rice (µg/day) | Continuous | $$As\_{rice}=T-As\_{cooked rice} ×Rice IR$$ | Continuous |
| Aswater | Daily intake of arsenic from drinking water (µg/day) | Continuous | $$As\_{water}=T-As\_{drinking water} ×Drinking$$$$ water IR$$ | Continuous |
| Aswheat flour | Daily intake of arsenic from wheat flour (µg/day) | Continuous | $$As\_{wheat flour}=T-As\_{wheat flour} ×$$$$Wheat flour IR$$ | Continuous |
| Aspotato | Daily intake of arsenic from potato (µg/day) | Continuous | $$As\_{potato}=T-As\_{potato} ×$$$$Potato IR$$ | Continuous |
| Age | Age of respondent 18+ year | Continuous | Grouping: 19-30; 31-40; 41-50; 51-60; 60+ years  | Categorical |
| BMI | Valid BMI (kg/m2) | Continuous | Grouping: Under 18.5 (underweight); 18.5 and below 25 (normal); Over 25 (overweight or obese) | Categorical |
| District | The district participants lived | Patna; Samastipur; Vaishali; Bhojpur; Begusarai; Chapara; Buxar; Bhagalpur |  | Categorical |
| Gender | Gender of participants | Male; Female |  | Categorical |
| Marital Status | Marital Status of participants | Unmarried; Married; Widow; Separated | Regrouping: Unmarried & Widow & Separated; Married;  | Categorical |
| Active tobacco use | Active tobacco use of participants |  | Yes: people who are smoking or tobacco chewing; Otherwise, No | Categorical |
| Passive smoking | Passive smoking use of participants | Yes; No |  | Categorical |
| Activity Level | Activity Level | Sedentary; Moderate; Heavy | Regrouping: Sedentary; Moderate & Heavy | Categorical |
| Heart Disease | Participants who have heart disease | Yes; No |  |  |
| Diabetes | Whether respondent is diabetic | Not diabetics; Diabetics |  | Categorical |
| Blood Sugar | Blood sugar level | Normal <140; High >140 |  | Categorical |
| Thyroid Disorder | Participants who are thyroid disorder | Yes; No |  | Categorical |
| Pregnant | Women who are pregnant | Yes; No |  | Categorical |
| Albumin | Serum Albumin level (g/dL) | Continuous | Grouping: Normal: 3.5-5 g/dL; Otherwise, Abnormal | Categorical |
| Cholesterol | Serum Cholesterol level (mg/dL) | Continuous | Grouping: Normal: < 200 mg/dL; Otherwise, Abnormal | Categorical |
| T-Ascooked rice | Total arsenic concentration in cooked rice |  |  | Continuous |
| T-Asdrinking water | Total arsenic concentration in drinking water |  |  | Continuous |
| T-Aswheatr flour | Total arsenic concentration in wheat flour |  |  | Continuous |
| T-Aspotato | Total arsenic concentration in potato |  |  | Continuous |
| Rice IR | Daily intake of cooked rice |  |  | Continuous |
| Wheat flour IR | Daily intake of wheat flour |  |  | Continuous |
| Drinking water IR | Daily intake of drinking water |  |  | 3.5 L/day |
| Potato IR | Daily intake of potato |  |  | Continuous |

For some characteristics, individuals were regrouped due to the small number of subjects in some categories

**Table A.2.** Variables adjusted in different models showed in Table 3 & 4

|  |  |
| --- | --- |
| Exposure pathway | Target variable |
| General Hypertension\_measured | log-transformed HDL | log-transformed LDL |
| Astotal | BMI, Age, Diabetes, Passive Smoking, Gender and Household Income | Districts, Age, BMI and Cholesterol | Household Income, Districts, BMI and Cholesterol |
|
| Asrice | BMI, Age, Aswater, Passive Smoking, Household Income and Diabetes | District, Cholesterol and Age | BMI, District, Household Income, Cholesterol and Heart Disease, Thyroid Disorder |
|
| Aswater | BMI, Age, Diabetes, Passive Smoking and Household Income | Age, Districts, BMI and Cholesterol | Household Income, Districts, BMI and Cholesterol |
|
| Aswheat flour | BMI, Age, Passive Smoking, Gender, Household Income, Diabetes and Aswater | Age, Districts and Cholesterol | Household Income, Districts, BMI, Cholesterol and Heart Disease |
|
| Aspotato | BMI, Age, Aswater, Diabetes, Passive Smoking and Household Income | Age, Districts and Cholesterol  | Household Income, Districts, BMI and Cholesterol |
|
| Asfood | BMI, Age, Diabetes, Household Income, Passive Smoking and Gender | Age, Districts and Cholesterol | Household Income, Districts, BMI, Heart Disease and Cholesterol |
|

HDL: Serum high-density lipoprotein level; LDL: Serum low-density lipoprotein level; Asrice, Aswater, Aswheat flour, Aspotato, Asfood and Astotal: daily As intake from rice, drinking water, wheat flour, potato, food (excluding drinking water) and both food and drinking water