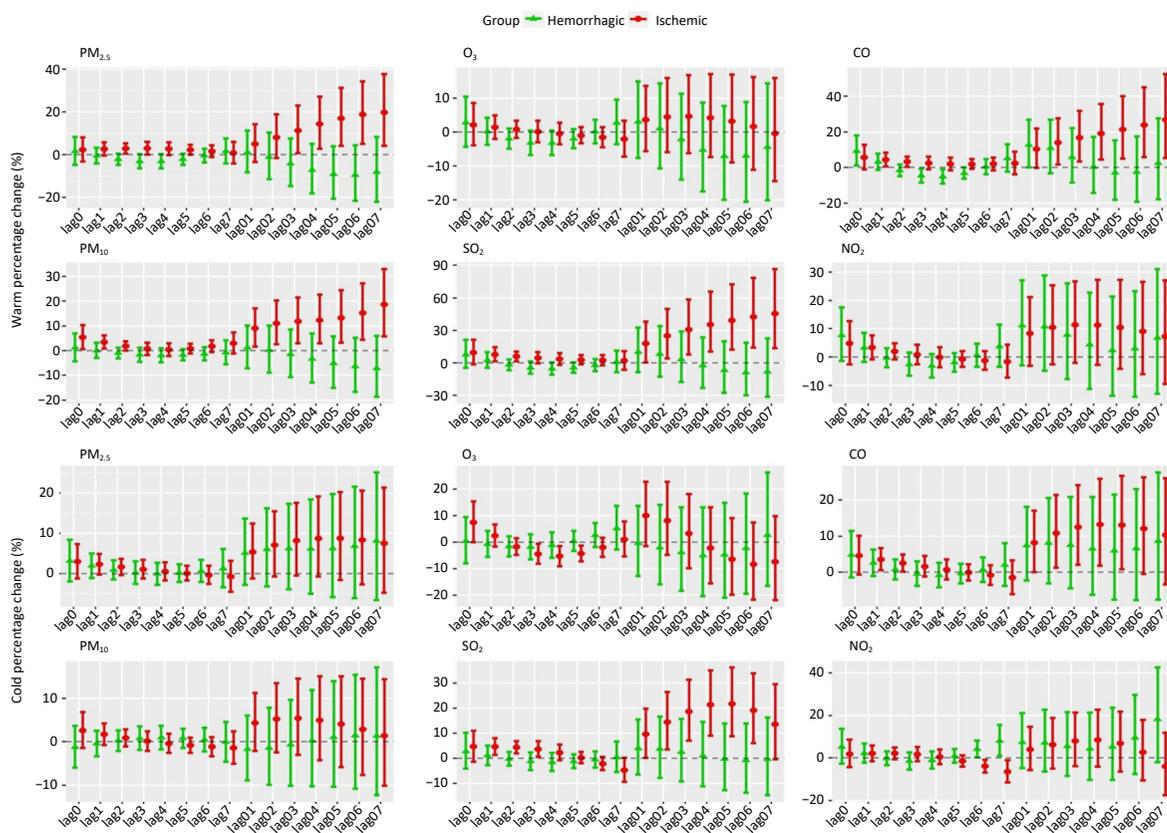
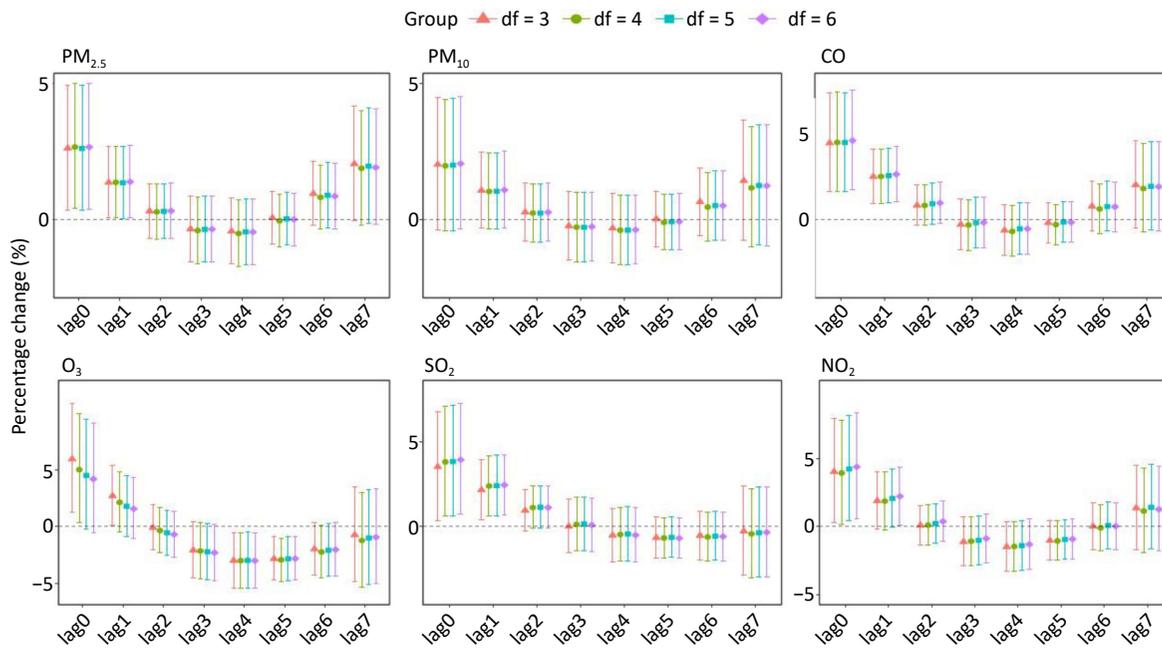


**Supplementary Figure S1.** Percentage change (95% CI) in stroke mortality associated with an IQR increase in ambient PM<sub>2.5</sub>, PM<sub>10</sub>, CO, O<sub>3</sub>, SO<sub>2</sub> and NO<sub>2</sub> constituents at lag0 day stratified by sex and age in single-pollutant model.



**Supplementary Figure S2.** Classification comparison of stroke with an IQR increase of exposure to ambient air pollution in cold and warm seasons.



**Supplementary Figure S3.** Percentage change (95% CI) in stroke mortality associated with an IQR increase in pollutants constituents when changed df of temperature and relative humidity into 4-6.

## Supplemental Material

Supplementary Table S1. Summary statistics of daily atmosphere pollutants, meteorological factors

Variables		Min	1st.Qu	Median	3rd.Qu	Max	Mean±SD
Total	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	4.83	24.02	36.38	58.25	273.13	45.90±32.54
	PM <sub>10</sub> (µg/m <sup>3</sup> )	15.60	51.73	73.00	106.17	441.05	85.32±49.23
	CO(mg/m <sup>3</sup> )	0.23	0.52	0.68	0.95	3.35	0.79±0.40
	O <sub>3</sub> (µg/m <sup>3</sup> )	20.23	67.06	95.74	125.55	278.65	99.77±39.83
	SO <sub>2</sub> (µg/m <sup>3</sup> )	3.35	8.11	15.09	24.50	169.04	19.56±19.62
	NO <sub>2</sub> (µg/m <sup>3</sup> )	3.95	22.09	30.43	41.21	98.05	32.88±14.84
	Temperature (°C)	-12.30	4.81	14.90	22.62	31.21	13.78±9.82
	Wind(m/s)	0.84	2.04	2.54	3.26	7.21	2.72±0.94
	Atmospheric pressure(hpa)	982.20	1002.5	1010.4	1017.8	1034.9	1010.44±9.23
	relative humidity(%)	25.57	56.00	68.29	79.00	98.29	67.01±15.09
Warm	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	4.83	19.57	28.38	40.85	111.67	32.34±17.58
	PM <sub>10</sub> (µg/m <sup>3</sup> )	15.26	42.22	58.88	81.54	342.20	65.76±34.40
	CO(mg/m <sup>3</sup> )	0.23	0.45	0.56	0.69	1.27	0.59±0.19
	O <sub>3</sub> (µg/m <sup>3</sup> )	20.23	96.47	119.50	143.09	278.65	121.05±37.16
	SO <sub>2</sub> (µg/m <sup>3</sup> )	3.35	6.46	9.94	17.59	54.60	12.67±7.86
	NO <sub>2</sub> (µg/m <sup>3</sup> )	3.95	18.00	24.93	32.41	69.22	25.93±10.61
	Temperature (°C)	6.63	18.91	22.57	25.37	31.21	21.98±4.5
	Wind(m/s)	1.07	1.99	2.47	3.08	7.21	2.61±0.85
	Atmospheric pressure(hpa)	982.19	999.49	1002.81	1008.88	1025.66	1004.19±6.68
	relative humidity(%)	27.43	62.71	74.29	82.14	96.71	71.69±13.83
Cold	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	9.50	32.30	50.30	75.27	273.13	59.68±38.02
	PM <sub>10</sub> (µg/m <sup>3</sup> )	18.61	66.34	92.77	128.10	441.05	105.19±54.09
	CO(mg/m <sup>3</sup> )	0.29	0.67	0.89	1.20	3.35	0.99±0.44
	O <sub>3</sub> (µg/m <sup>3</sup> )	24.13	56.09	73.14	94.60	231.87	78.15±29.48
	SO <sub>2</sub> (µg/m <sup>3</sup> )	3.83	12.98	20.54	34.02	169.04	26.56±19.92
	NO <sub>2</sub> (µg/m <sup>3</sup> )	6.21	28.39	38.29	49.83	98.05	39.94±15.19
	Temperature (°C)	-12.30	0.79	4.79	10.10	22.94	5.44±6.01
	Wind(m/s)	0.84	2.09	2.64	3.47	6.79	2.83±1.01
	Atmospheric pressure(hpa)	993.53	1012.04	1017.34	1021.80	1034.86	1016.79±6.83
	relative humidity(%)	25.57	51.57	61.86	73.07	98.29	62.27±14.84

**Notes:**warm seasons, May to October; cold seasons, November to April of the following year.

**Supplementary Table S2.** Percent change (95% CI) in odds of mortality from ischemic stroke and hemorrhagic stroke associated with an IQR increase in exposure to PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>2</sub>, CO and O<sub>3</sub>

Air pollution	Lag period	Percentage change, % (95% CI)		
		Hemorrhagic stroke	Ischemic stroke	<i>p</i>
PM <sub>2.5</sub>	Lag 04 day	-1.17 (-8.10,6.28)	6.83 (0.46,13.62)	<0.01
PM <sub>10</sub>	Lag 04 day	-3.62 (-10.76,4.09)	7.28 (0.47,14.56)	<0.01
CO	Lag 04 day	-0.59 (-8.74,8.29)	12.46 (4.62,20.89)	<0.01
O <sub>3</sub>	Lag 02 day	-1.90 (-14.97,13.19)	6.82 (-5.17,20.33)	<0.01
SO <sub>2</sub>	Lag 04 day	-1.51 (-9.85,7.60)	12.40 (4.25,21.19)	<0.01
NO <sub>2</sub>	Lag 03 day	-1.90 (-11.66,8.94)	9.67 (0.58,19.59)	<0.01

**Notes:** PM<sub>2.5</sub>, particulate matter with an aerodynamic diameter of 2.5µm or less; PM<sub>10</sub>, particulate matter with an aerodynamic diameter of 10µm or less; CO, carbon monoxide; O<sub>3</sub>, ozone, SO<sub>2</sub>, sulfur dioxide; NO<sub>2</sub>, nitrogen dioxide.

**Supplementary Table S3.** Percent change (95% CI) in odds of mortality from ischemic stroke and hemorrhagic stroke associated with an IQR increase in exposure to ambient PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>2</sub>, CO and O<sub>3</sub> with the cold and warm seasons

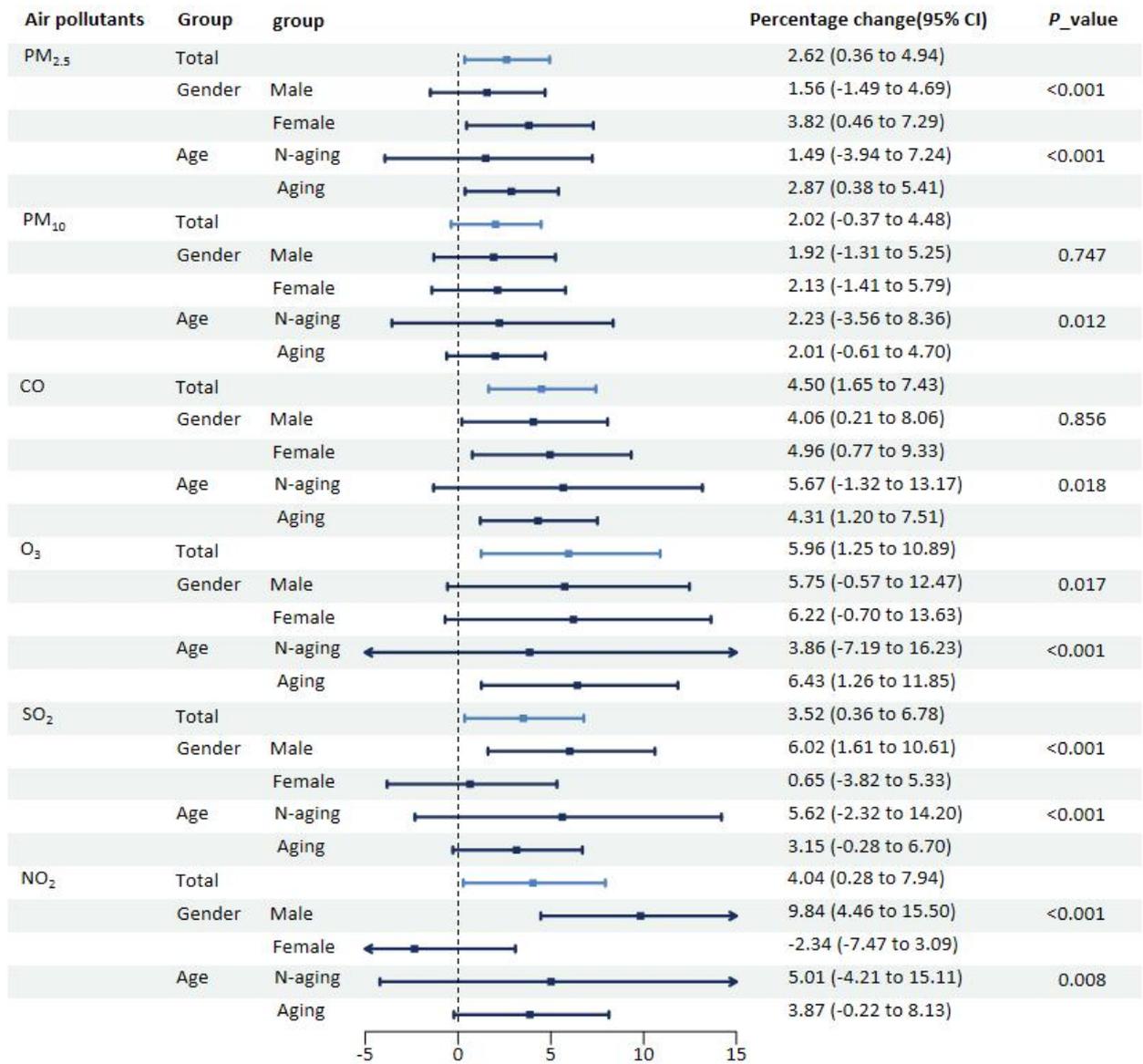
Air pollution	Lag period	Warm season Percentage change, % (95% CI)			Cold season Percentage change, % (95% CI)		
		Hemorrhagic stroke	Ischemic stroke	<i>p</i>	Hemorrhagic stroke	Ischemic stroke	<i>p</i>
PM <sub>2.5</sub>	Lag 04 day	-7.17 (-18.00,5.09)	14.37 (2.82,27.21)	<0.01	6.09 (-4.96,18.44)	8.70 (-0.80,19.12)	<0.01
PM <sub>10</sub>	Lag 04 day	-3.41 (-12.84,7.04)	12.32 (2.91,22.59)	<0.01	0.22 (-10.20,11.85)	4.93 (-4.29,15.03)	<0.01
CO	Lag 04 day	0.27 (-14.19,17.17)	19.05 (4.46,35.68)	<0.01	6.42 (-6.34,20.94)	13.22(1.79,25.94)	<0.01
O <sub>3</sub>	Lag 04 day	-5.27 (-17.46,8.73)	4.25 (-7.27,17.20)	<0.01	-5.12 (-20.45,13.16)	-2.27(-15.54,13.09)	<0.01
SO <sub>2</sub>	Lag 04 day	-2.48 (-23.11,23.70)	35.34 (10.41,65.89)	<0.01	0.99 (-11.01,14.61)	21.39 (9.11,35.06)	<0.01
NO <sub>2</sub>	Lag 01 day	11.08 (-2.96,27.08)	8.31 (-3.13,21.10)	<0.01	7.95 (0.91,15.48)	-6.48 (-11.51,-1.17)	<0.01

**Notes:** PM<sub>2.5</sub>, particulate matter with an aerodynamic diameter of 2.5µm or less; PM<sub>10</sub>, particulate matter with an aerodynamic diameter of 10µm or less; CO, carbon monoxide; O<sub>3</sub>, ozone, SO<sub>2</sub>, sulfur dioxide; NO<sub>2</sub>, nitrogen dioxide.

**Supplementary Table S4.** Percentage change(95%CI) in odds of mortality from total stroke associated with an IQR increase in exposure to ambient air pollution estimated by single-and 2-pollutant models

Air pollution	Lag period	Total stroke		
		Percentage change(%)	confidence interval(95%CI)	p for difference
PM <sub>2.5</sub>	Lag 04 day	3.54	(-1.15,8.45)	
+O <sub>3</sub>		4.30	(-1.07,9.95)	0.052
+SO <sub>2</sub>		0.74	(-4.54,6.30)	0.001
+NO <sub>2</sub>		1.74	(-3.89,7.70)	0.034
PM <sub>10</sub>	Lag 04 day	2.82	(-2.13,8.02)	
+O <sub>3</sub>		3.26	(-2.51,9.37)	0.047
+SO <sub>2</sub>		-0.99	(-6.64,5.00)	<0.001
+NO <sub>2</sub>		1.18	(-5.13,7.91)	0.041
CO	Lag 04 day	7.03	(1.35,13.03)	
+O <sub>3</sub>		8.37	(1.77,15.40)	0.071
+SO <sub>2</sub>		4.45	(-2.09,11.43)	0.009
+NO <sub>2</sub>		7.79	(0.10,16.08)	0.198
O <sub>3</sub>	Lag 01 day	8.82	(1.49,16.68)	
+PM <sub>2.5</sub>		7.12	(-0.22,15.00)	0.366
+PM <sub>10</sub>		7.91	(0.51,15.86)	0.878
+CO		6.47	(-0.94,14.44)	0.095
+SO <sub>2</sub>		9.53	(2.00,17.60)	0.007
+NO <sub>2</sub>		9.46	(1.91,17.56)	0.329
SO <sub>2</sub>	Lag 04 day	6.22	(0.39,12.40)	
+PM <sub>2.5</sub>		7.71	(0.50,15.43)	0.099
+PM <sub>10</sub>		8.14	(0.89,15.91)	0.376
+O <sub>3</sub>		6.55	(0.24,13.26)	0.064
+CO		4.87	(-2.52,12.82)	0.103
+NO <sub>2</sub>		6.24	(-1.51,14.61)	0.105
NO <sub>2</sub>	Lag 01 day	6.01	(0.18,12.18)	
+PM <sub>2.5</sub>		4.89	(-1.87,12.11)	0.064
+PM <sub>10</sub>		6.37	(-0.62,13.84)	0.315
+O <sub>3</sub>		3.97	(-2.20,10.54)	0.083
+CO		2.16	(-4.95,9.81)	0.061
+SO <sub>2</sub>		5.41	(-1.20,12.46)	0.002

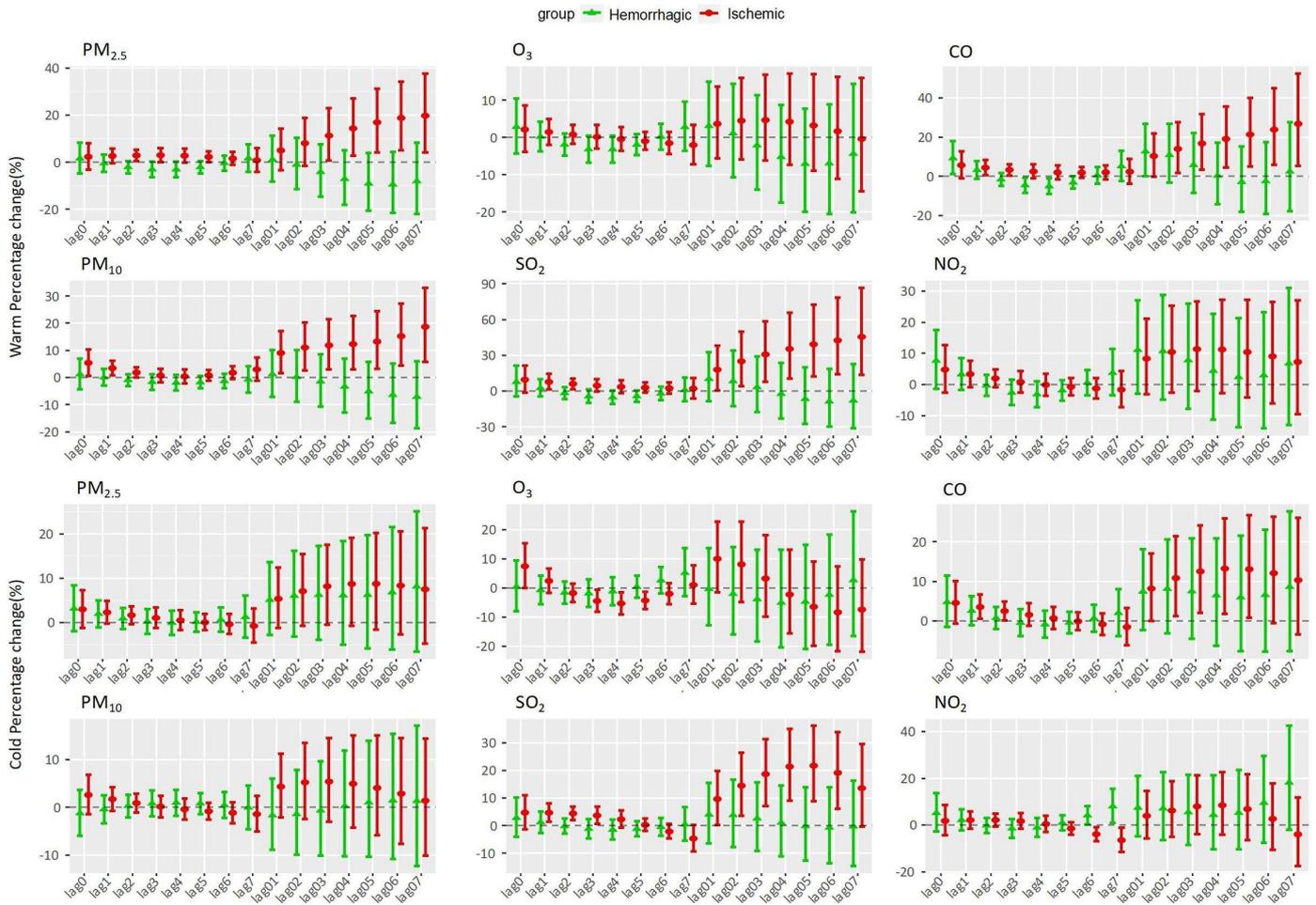
**Notes:** PM<sub>2.5</sub>, particulate matter with an aerodynamic diameter of 2.5µm or less; PM<sub>10</sub>, particulate matter with an aerodynamic diameter of 10µm or less; CO, carbon monoxide; O<sub>3</sub>, ozone, SO<sub>2</sub>, sulfur dioxide; NO<sub>2</sub>, nitrogen dioxide.



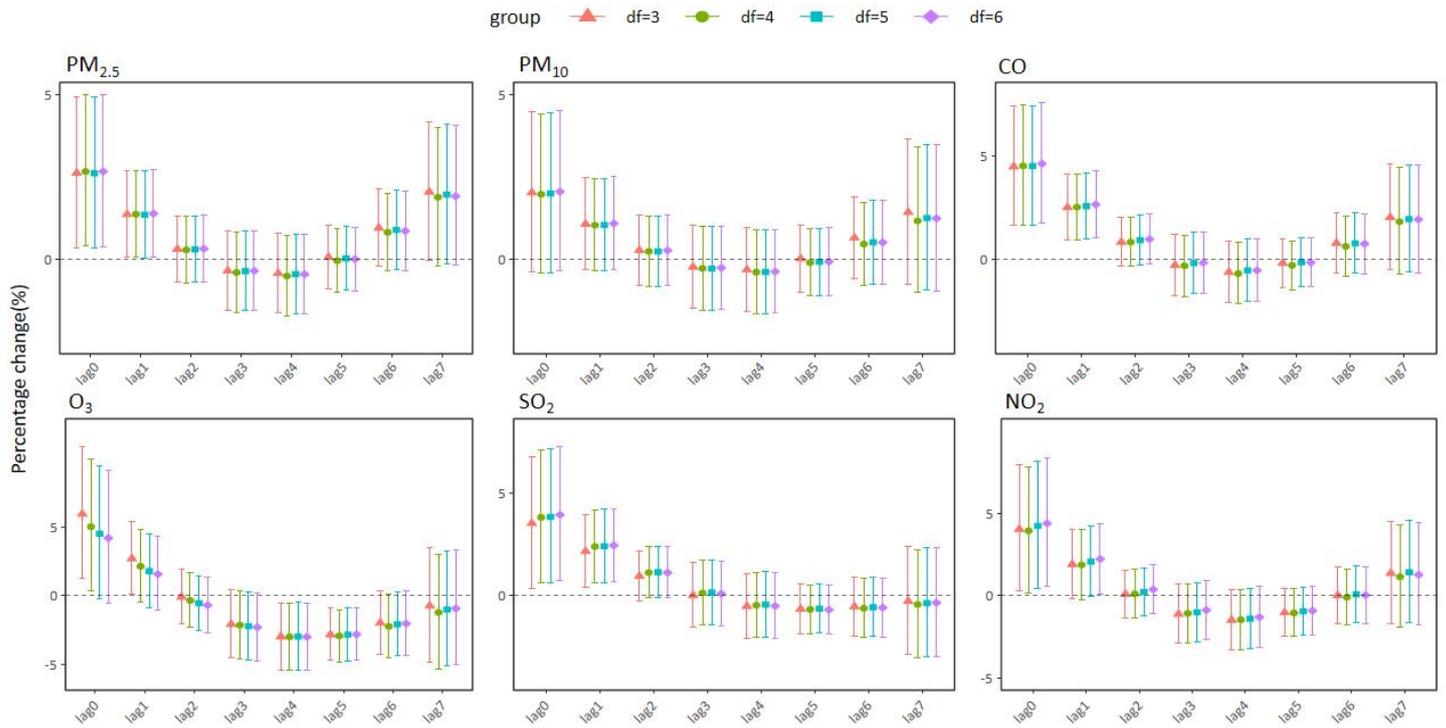
**Supplementary Figure S1 .** Percentage change (95% CI) in stroke mortality associated with an IQR

increase in ambient PM<sub>2.5</sub>, PM<sub>10</sub>, CO, O<sub>3</sub>, SO<sub>2</sub> and NO<sub>2</sub> constituents at lag0 day stratified by sex and age

in single-pollutant model.



**Supplementary Figure S2.** Classification comparison of stroke with an IQR increase of exposure to ambient air pollution in cold and warm seasons.



**Supplementary Figure S3.** Percentage change (95% CI) in stroke mortality associated with an IQR increase in pollutants constituents when changed df of temperature and relative humidity into 4-6.