NEUROLOGICAL EVENTS FOLLOWING COVID-19 VACCINATION: DOES ETHNICITY MATTER?

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DISCLOSURES:
CONFLICT OF INTERESTS

- For this presentation, none for all authors.

- Dr. Joseph Y. Chu is Principal Investigator for the research project: COVID-19 and its effects on visible minorities (Chinese and South Asians) in Ontario, funded by both University of Toronto and CCHABA.
- Dr. Chu is also the current Chair of Research Committee, Chinese Canadian Heart and Brain Association (CCHABA) www.heartbrain.ca

KEY POINTS

- **Question:** Do the rates of neurological events in the six weeks following COVID-19 vaccine vary by ethnicity?

- **Findings:** In this retrospective cohort study of 10 million adult Ontarians, who received at least one dose of COVID-19 vaccine, compared to the general population, the crude rates of neurological events within 42 days of vaccination were lower in Chinese and South Asians. However, these differences were not significant after accounting for age, sex, and vaccine type, except for lower odds of ischemic stroke in Chinese Ontarians compared to the general population: (aOR 0.74, 95% CI 0.59-0.91).

- **Meaning:** The rate of neurological events in the six weeks following COVID-19 vaccine is low and does not vary by ethnicity. The observed lower rate of ischemic stroke in Chinese could be due to the known lower rate of stroke in this ethnic group. [10]

METHODS

- Retrospective population-based cohort study of Ontario residents between 18 and 105 years old; December 1,2020 to June 30, 2021.
- Neurological complications within 42 days receiving 1st and 2nd dose of COVID-19 vaccines (COVID-19 vaccine registry COVaxON)
- Ethnicity using RPDB surname-based algorithm to classify as :

  Chinese, South Asians and General Population.

Types of neurological complications:

(1) Strokes- ischemic (IS) or hemorrhagic (ICH)

(2) Cerebral Venous Sinus Thrombosis (CVST)

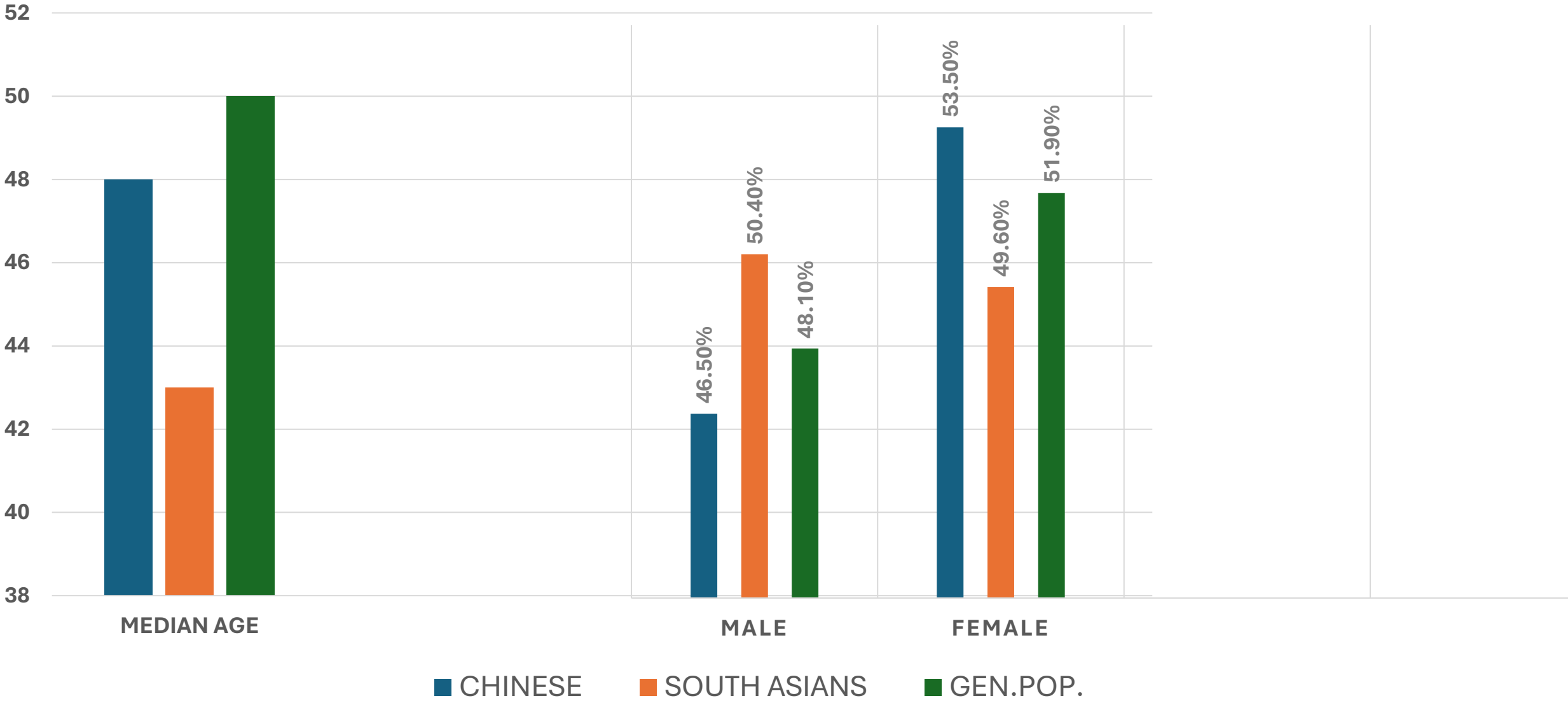
(3) Bell's Palsy

(4) Transverse Myelitis (TM)

(5) Guillain Barre Syndrome (GBS)

VACCINATION COHORT: MEDIAN AGE & GENDER

(N= 10,063,466 received 19,933,221 doses)Chinese:1.1 million, SA: 857,289



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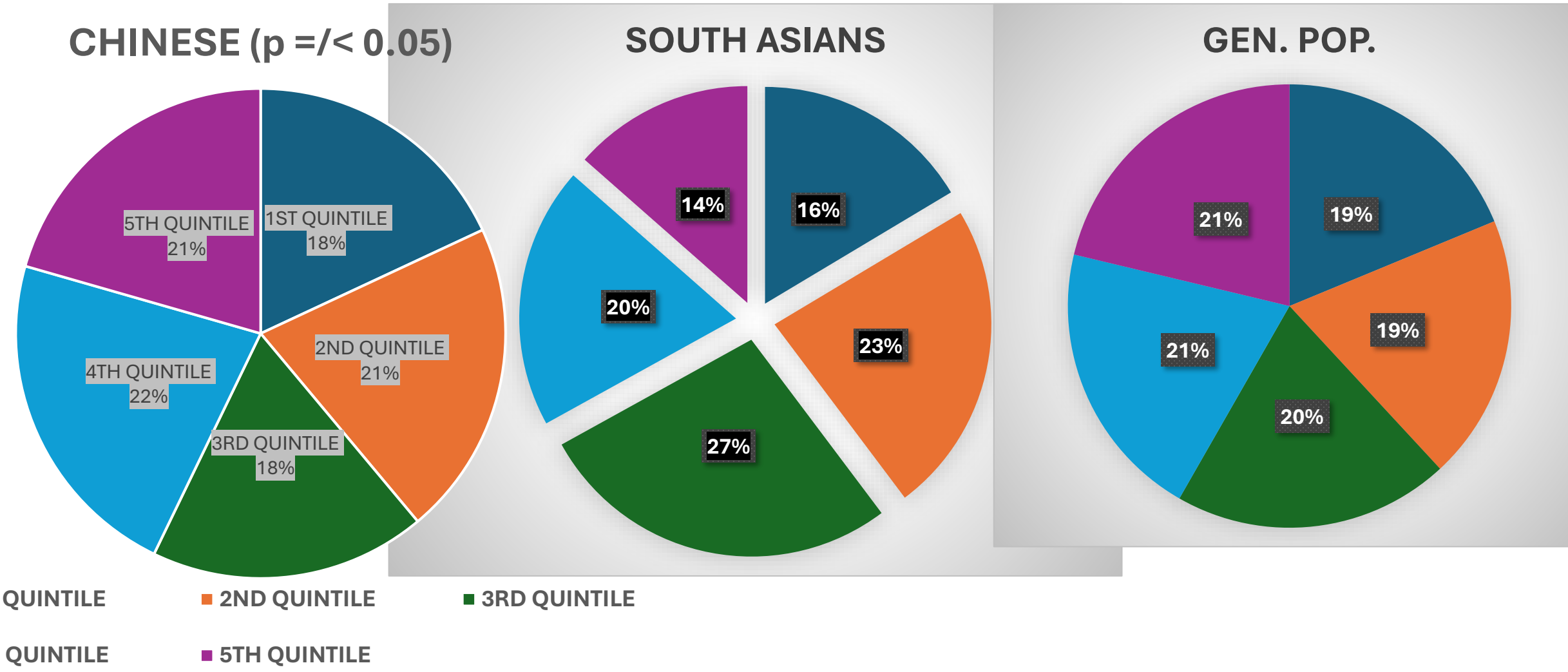
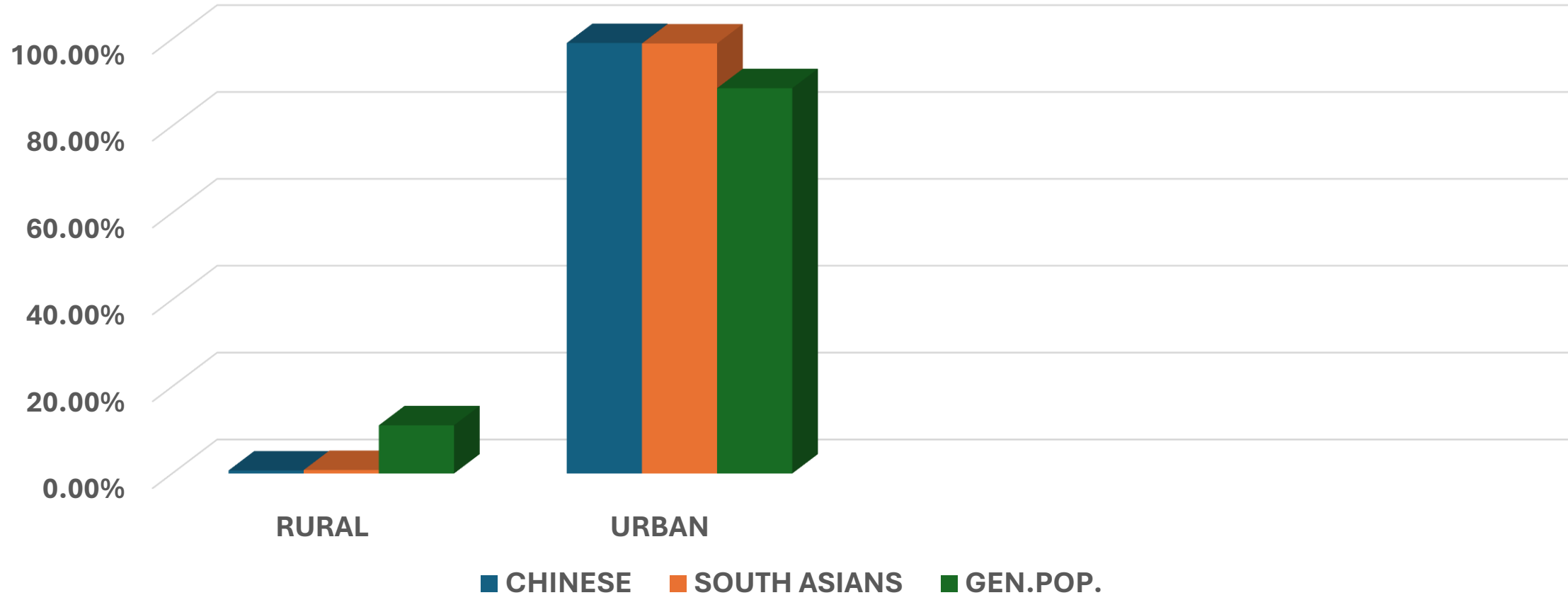
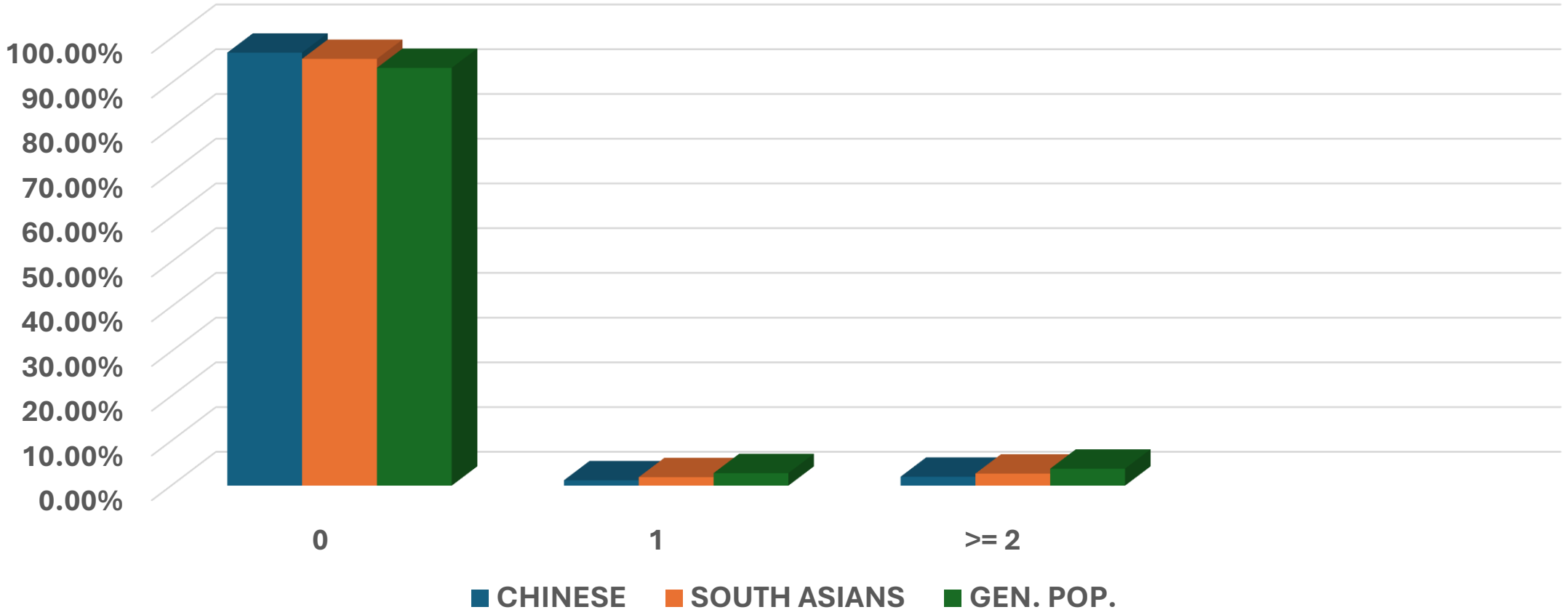


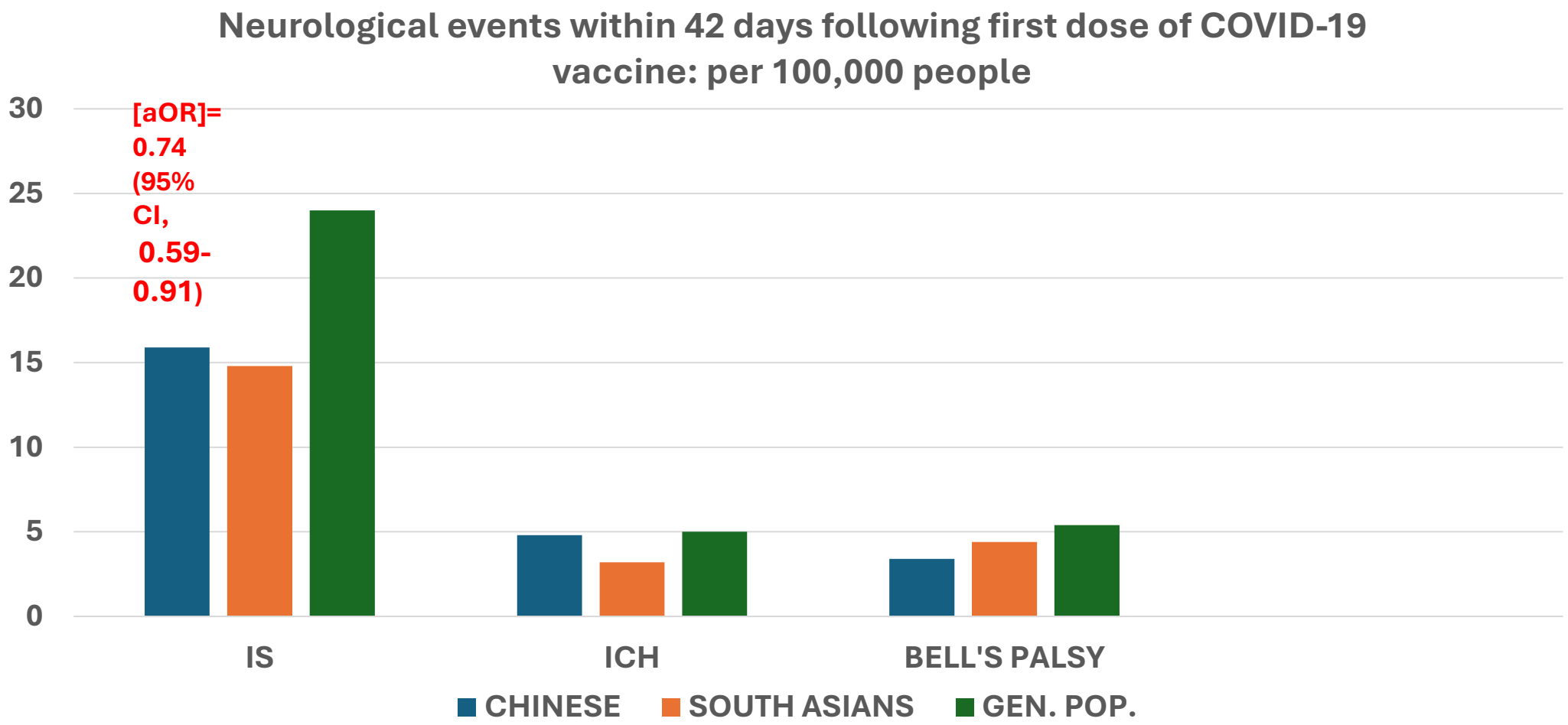
RURAL/URBAN AT INDEX DATE



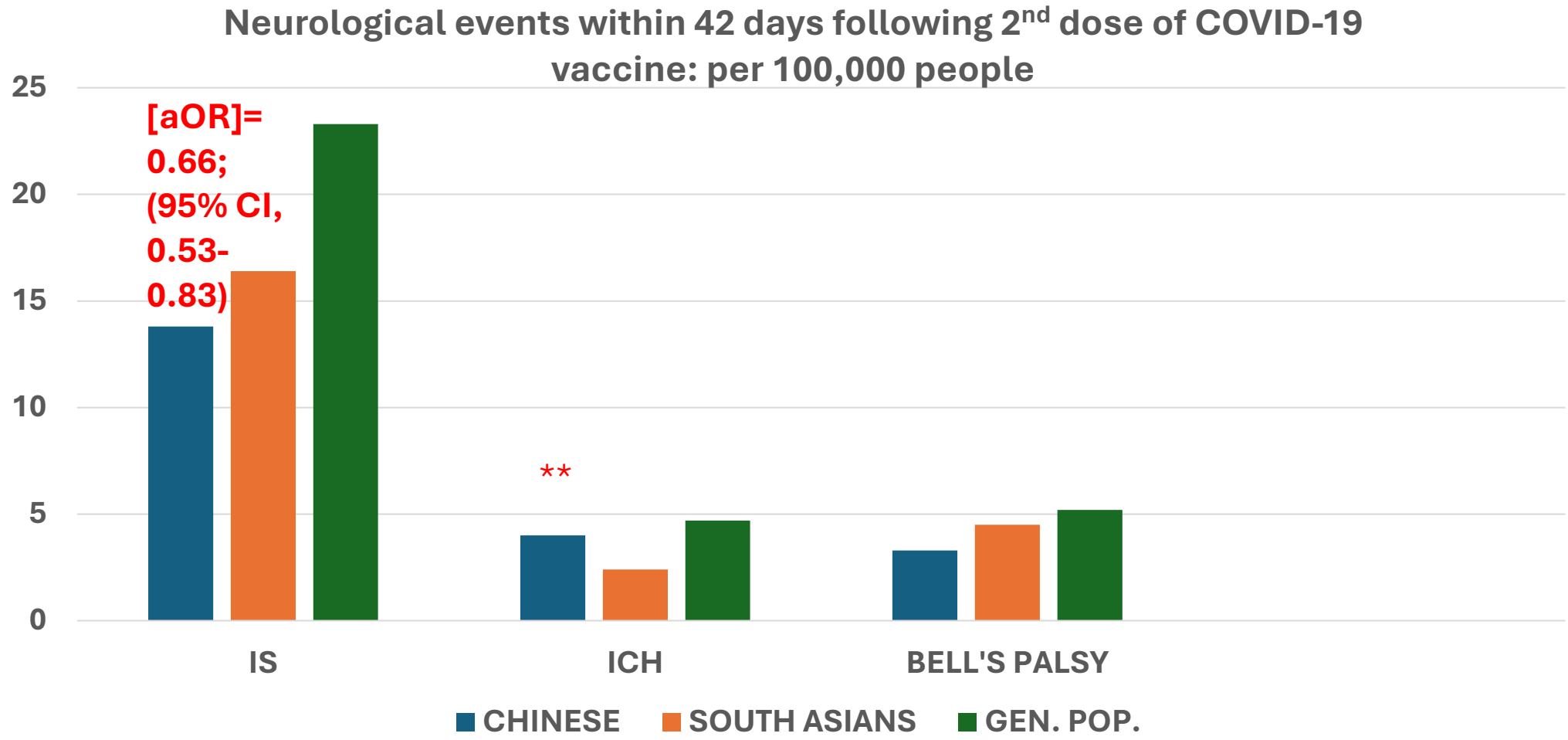
CHARLSON COMORBIDITY SCORE CONTINUOUS (5-YEAR HISTORY)



RESULTS AFTER 1ST DOSE



RESULTS AFTER 2ND DOSE



RESULTS:

- Other neurological complication rates :

- CVST : n = 52
- GBS : n =72
- TM: n = 25

These numbers were too low for meaningful statistical analysis between ethnicity.

CONCLUSIONS (1)

- In this population-based retrospective cohort study in Ontario, rates of neurological events following the first or the second dose of COVID-19 were low and were largely similar after both doses. While crude rates were lower in South Asians and Chinese , there were no ethnic differences in rates of neurological events following vaccination after adjustment for age, sex, and vaccine type.
- We too found a lower rate of ischemic stroke in Asian Ontarians, but no difference in the rate of ICH. Further, our observed rates of these events are similar to the baseline rates observed in Ontario in the years preceding COVID-19 infection[9], and the known ethnic differences in the incidence of stroke and its subtypes.[10]

CONCLUSIONS (2)

- Since there is no overall variation in neurological complications by ethnicity following COVID-19 vaccination, this should encourage all ethnic groups in Ontario to be vaccinated for COVID-19.

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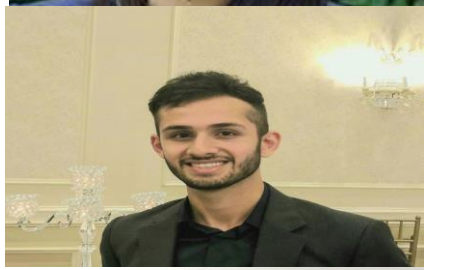

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THANK YOU