

BURDEN AND EPIDEMIOLOGY OF HUMAN METAPNEUMOVIRUS-ASSOCIATED RESPIRATORY TRACT INFECTIONS IN OLDER ADULTS

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BACKGROUND

- Acute respiratory infections (ARIs) were ranked one amongst all causes of disease burden (incidence) globally and in Scotland in 2019⁽¹⁾.
- ARIs were the leading cause of death amongst infectious disease globally (6th amongst all causes) and in Scotland (5th amongst all causes) in 2019⁽¹⁾.
- The ARI disease burden in adults tends to concentrate in older adults and those living with comorbidities^(2,3).
- Human meta-pneumovirus (hMPV) is one of the viral agents associated with ARIs.

RESEARCH AIMS

- To estimate the burden, severity, and outcomes of hMPV-associated respiratory infections in older adults
- To compare the estimates with those of influenza and respiratory syncytial virus (RSV)

METHODS

Systematic review and meta-analysis:



Global (2001 to 2022)

- Test positivity
- Incidence
- Mortality

Status: Interim findings

Retrospective cohort



study using linked data:

Scotland (2017 to 2022)

- Test positivity
- Incidence rate in hospitalised patients
- Mortality
- Requirement of ICU admission
- Length of hospital stay

Status: NHS Scotland Public Benefit and Privacy Panel for Health and Social Care (HSC-PBPP) approval, data access gained

Retrospective cohort study using linked data and electronic clinical health records:



Lothian (2010 to 2022)

- Test positivity
- hMPV seasonality
- Incidence rate in hospitalised patients
- Mortality
- Requirement of ICU admission and level of care
- Length of hospital stay

Status: NHS Quality Improvement Project application approved, application for research to be submitted to Caldicott Guardian

INTERIM FINDINGS

Systematic review and meta-analysis (Global)

- Forty-four studies were included in the systematic review.
- The pooled estimate of ARI test positivity was higher in studies from lower-middle-income countries, among hospitalised patients, studies including both serology and PCR as testing methods, and smaller sample studies.

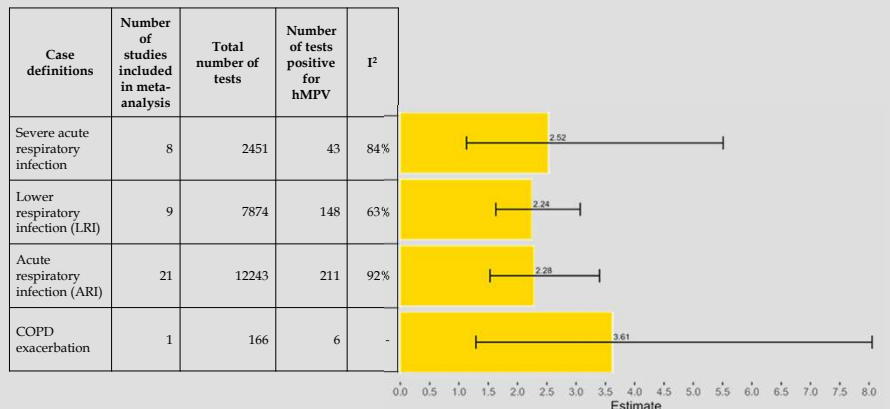


Figure 1: hMPV test positivity estimates according to case definitions in adults aged ≥60 years

Retrospective cohort study using linked data and electronic clinical health records (Lothian)

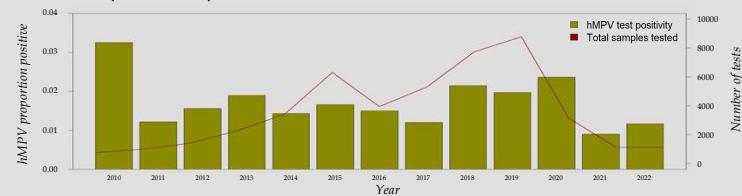


Figure 2: hMPV test positivity in old adults by year

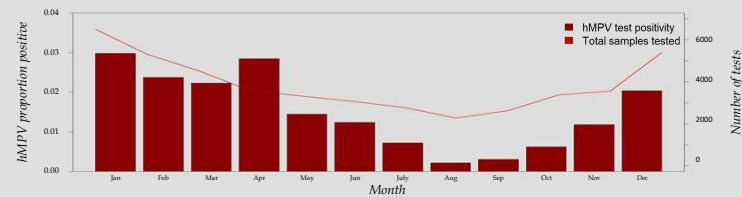


Figure 3: hMPV test positivity in old adults by month (2010 - 2022)

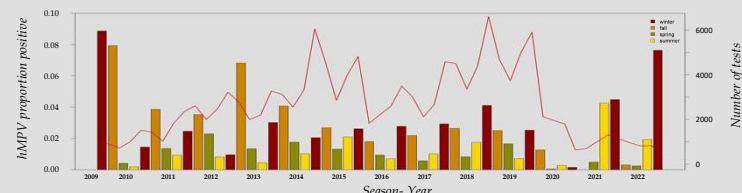


Figure 4: hMPV test positivity in old adults by season

(1) Global Burden of Disease Collaborative Network. Global Burden of Disease Study 2019 (GBD 2019) Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2020. Available from <https://vizhub.healthdata.org/gbd-results/>.

(2) Falsey AR. Human Metapneumovirus Infection in Adults. The Pediatric Infectious Disease Journal. 2008;27(10):S80-S3.

(3) Walsh EE, Peterson DR, Falsey AR. Human Metapneumovirus Infections in Adults: Another Piece of the Puzzle. Archives of Internal Medicine. 2008;168(22):2489-96.