

Evaluating cirrhosis and Respiratory Syncytial Virus infection: should we vaccinate?

Northern Health

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INTRODUCTION & AIM

Respiratory Syncytial Virus (RSV) is a common respiratory infection with significant morbidity and mortality amongst patients with co-morbidities. A recent American study suggested that cirrhosis patients experienced double the odds of inpatient mortality compared to non-cirrhotic patients (1). RSV vaccination has recently been approved in Australia and recommended for individuals at higher risk of severe RSV. Given the paucity of research evaluating this risk in cirrhosis, the aim of this study was to assess the burden and compare to other conditions included in vaccination recommendations.

METHOD

We conducted a retrospective, single-center study at an Australian tertiary hospital between 2017-2024. Using International Statistical Classification of Diseases (ICD-10) codes, patients hospitalised with RSV and either cirrhosis, ischaemic heart disease (IHD), congestive heart failure (CHF), chronic kidney disease (CKD), chronic obstructive pulmonary disease (COPD), obesity and diabetes were identified.

RESULTS

Among 163 patients hospitalised with RSV, 2 had cirrhosis (1.2%). In contrast, a higher proportion had other comorbidities (*Fig. 1*). 50 RSV-positive patients died during their admission (30.7%), including 1 cirrhotic patient. Independent risk factors for inpatient mortality included age (OR 1.05, 95% CI:[1.02 – 1.09], $p < 0.001$) and diabetes (OR 2.19, 95% CI:[1.01 – 4.84], $p = 0.049$), but not cirrhosis (*Table 1*).

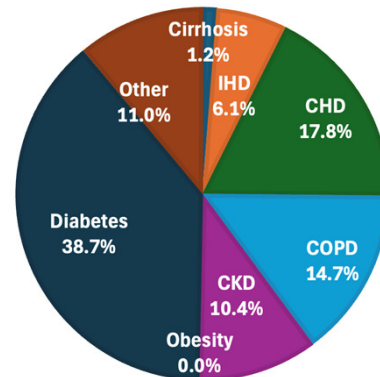
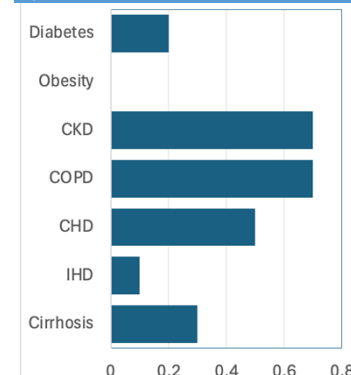


Fig.1 Characteristics of patients hospitalised with RSV (n=163)

Fig.2 Relative burden of RSV+ve (%) by health condition



Of 744 individual patients with cirrhosis known to our service over the 8-year study period, 0.3% were hospitalised with RSV. This was higher than obesity alone (0.0%), IHD (0.1%) and diabetes (0.2%), but lower than CHF (0.5%), COPD (0.7%) and CKD (0.7%) (*Fig. 2*).

Table 1. Multivariable logistic regression: Independent risk factors for mortality in patients hospitalised with RSV

Variable	Adjusted OR	95% CI	p-value
Age	1.05	1.02 - 1.09	0.002
Gender	1.01	0.48 - 2.16	0.980
Cirrhosis	8.56	0.3 - 245.53	0.154
IHD	1.72	0.38 - 7.32	0.460
CHF	0.9	0.3 - 2.63	0.853
COPD	0.72	0.2 - 2.29	0.588
CKD	2.02	0.63 - 6.44	0.229
Diabetes	2.19	1.01 - 4.84	0.049

CONCLUSION

The burden of RSV amongst patients with cirrhosis over an 8-year period appears to be low, but higher than other documented at-risk conditions. With limited numbers in this study, cirrhosis was not associated with higher inpatient mortality. Overall, population-level data is required to inform RSV vaccination strategies in Australia.