

# COVID19 LOCK-DOWN IMPACT ON PREVALENCE OF ACUTE OTITIS MEDIA.

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Both acute otitis media (AOM) and tonsillitis are common presenting complaints in Primary Care and ENT setting.

Tonsillitis accounts for between 5 and 10% of all cases of illness seen by the general practitioner. This has been a rather stable prevalence over the last 100 years or so (Collins, 1935). The analysis of the incidence by age shows, for both tonsillitis and sore throat, a relatively high incidence in childhood and young adults, while after that period there is a fall with age. Laryngitis, on the other hand, appears to occur more frequently among adults than among children.

The incidence of tonsillitis, sore throat and other pharynx diseases is higher among females than males. There is no indication among school-age children that there is a higher incidence in women.

There is a fairly regular seasonal variation in incidence as well, with higher incidence in winter and spring.

Acute otitis media appears to be far more prevalent in children under the age of 10 and significantly less common from the third decade of life onwards.

The UK was put into lockdown on 23 March 2020 in an unprecedented step to attempt to limit the spread of coronavirus. From an audit of over a total population of 9534 people, starting from the beginning of the lockdown to the 18 May 2020, the number of patients with diagnosis of tonsillitis was audited. The data were compared to those recorded in the 5 precedent five years during the very same period of time. Tonsillitis accounted, on average, for 8% of all cases of illness seen by the general practitioner from 2015 to 2019. The mean number of patients seen for tonsillitis was 805.8 with SD of 28.96. In 2020, the number of cases of tonsillitis was 593. From 2015 to 2020, the higher incidence in the female sex was confirmed from all the age bands >19.

The greatest drop in cases was not recorded in the age group 0 to 9, but - in the order - 10 to 19, 20 to 29 and 30 to 39 with a reduction above the 30% in the first 2 age bands. Overall, the drop was seen across all the age bands (Cervoni, 2020).

The same cannot be said for the diagnosis of acute otitis media in its various forms.

To establish the impact of the lock-down on the diagnosis of acute otitis media, we audited a total population of 9534 people, starting from the beginning of the lock-down in March 2020, to the end of the phase 1 of the lock-down in May 2020, for the number of patients with diagnosis of AOM.

From 2015 to 2020, across the very same period of time, there has been a relatively stable prevalence with, perhaps, a slightly decreasing trend.

The drop recorded during the pandemic does not reach statistical significance.

Furthermore, differently from the diagnosis of tonsillitis, there is not obvious difference of incidence between males and females.

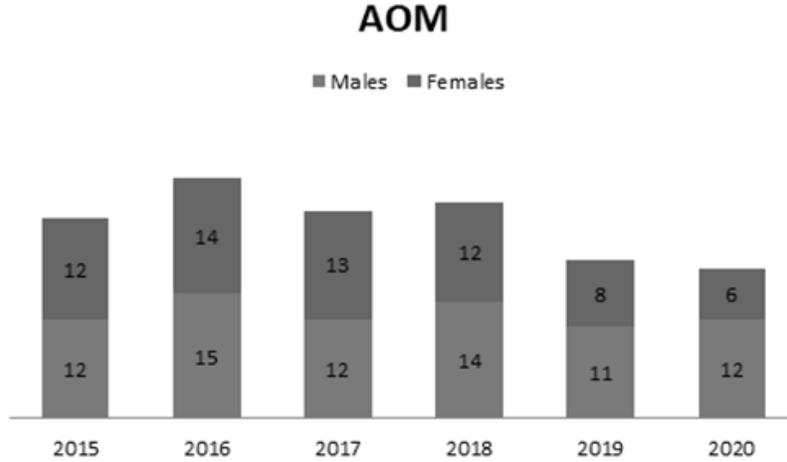


Figure 1: Diagnosis of AOM during the Covid19 lock-down period.

Figure 1: Trends in diagnosis of tonsillitis during the Covid19 lockdown period.

The findings do resonate with what has been reported in previous papers (Stockmann C, 2013).

Stockmann et colleagues reported a strong correlations between AOM and the activity of individual circulating respiratory viruses, particularly RSV and human metapneumovirus and weaker correlations between AOM and influenza A, influenza B, adenovirus, and rhinovirus. Yet, when first-order auto-regressive integrated moving average (ARIMA) models were constructed that appropriately corrected for the autocorrelation of time-series data, the association was no longer statistically significant for a number of respiratory viruses.

This may account for a far less obvious impact of the lockdown effect on AOM when compared to the diagnosis of tonsillitis.

## Bibliography

Cervoni, E. (2020). Trends in diagnosis of tonsillitis during the Covid19 pandemic. *Authorea*, DOI: 10.22541/au.159018084.41587278.

Collins, S. D. (1935). Age Incidence of Specific Causes of Illness: Based on Records for 9,000 Families in 18 States Visited Periodically for 12 Months, 1928-31. *Public Health Reports (1896-1970)*, 1404-1427.

Stockmann C, A. K. (2013). Seasonality of acute otitis media and the role of respiratory viral activity in children. *Pediatr Infect Dis J*, 314-319.