

## ASTHMA DEATH: ABSENCE OF RHINOVIRUS IN PERIPHERAL LUNG TISSUE

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Viral infections are associated with both mild and severe exacerbations of asthma and may therefore be associated with asthma death. Our hypothesis was that it might be possible to detect rhinovirus (RV), the virus most frequently implicated in acute asthma, in lung tissue from patients who died with acute asthma. Methods: We studied archival, wax-embedded lung tissue obtained post-mortem from: (i) subjects with fatal asthma (n=12), (ii) asthmatics with non-asthma related death (n=3) and (iii) normal individuals who died from unrelated causes (n=3). A validated reverse transcription-polymerase chain reaction (RT-PCR) was used to detect RV with RT-PCR for constitutive gene expression (APRT gene) to confirm RNA preservation. Sensitivity of the assay was assessed in wax-embedded RV infected cells. Results: Sensitivity of RT-PCR for RV in wax-embedded sections was the same as in previous studies (3x greater than viral culture). Tissue used for study was predominantly of alveolar origin and all tissue examined was negative for the presence of RV and positive for APRT mRNA. Conclusion: RV infection of the lower airway may not extend to alveolar tissue and more proximal tissue sampling or PCR for other viruses may have yielded a positive result. Prospective collection of appropriate tissue from the upper and lower respiratory tract is required for future studies.

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**Key words:** Asthma death, rhinovirus, RT-PCR, wax-embedded tissue.