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# Organ Dysfunction Associated with Influenza Infection and It's Complications

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## Description

Influenza viruses cause worldwide annual epidemics of respiratory diseases that affect populations of all ages. These viruses cause not only rapid outbreaks but also infections with a wide range of disease severities. Children are the most susceptible to infection, with annual incidence rates of up to 30%. In addition, children are frequently the primary transmitters of influenza in the community they shed the virus at higher titres and for a longer period than adults do because of their lack of prior exposure and immunity to the virus. Children with influenza virus infection have a substantial risk of developing serious diseases. Several pulmonary and extrapulmonary complications, including myocarditis and pericarditis, myositis, seizure, renal failure and sepsis, have been reported to be associated with influenza A or B infection. Severe organ dysfunction associated with influenza infection may necessitate several types of advanced therapies. Even with modern medical developments, influenza infection has high mortality and morbidity. Influenza infection has been found to additionally affect the adult population by increasing work absenteeism, and it is associated with high influenza-related morbidity and mortality in high-risk populations.

## Effects of Other Bacterial and Viral Coinfections after Influenza Infection

When the severity of influenza A or B infection is compared in children, outcomes should be adjusted for age because the clinical presentation of the illness varies between age groups. However, the associations of different complications with individual paediatric ages or with virus types are not well defined in the literature. In addition, several controversial reports have suggested an association between the simultaneous presence of dual or multiple infections and an increase in disease severity. Furthermore, the effects of other bacterial and viral coinfections after influenza infection remain unclear. As modern medical treatment advances to reduce mortality and morbidity, clinical information is crucial in enabling clinicians to provide prompt management to patients who are critically ill with influenza. We explored the demographic characteristics and influenza complications of paediatric patients with laboratory-confirmed influenza infections. Microbiologic data, including the presence of additional bacteria and viruses, were also analysed to evaluate their effects on the epidemiological and clinical features of patients, especially regarding complications and severity.

## Patterns of Influenza Complications

Different age groups also had distinct incidence rates of organ involvement. In general, pulmonary complications were common across all age groups, and the incidence was almost parallel to that of overall influenza complications. The other three major influenza complications were seizure, cardiac complications, and rhabdomyolysis. Two peaks occurred for seizure attack: one in children aged 1–4 years and one in children aged 10–11 years. Cardiac complications and invasive bacterial infections exhibited a U-shaped curve with a higher incidence in both younger and older age groups. Neurological complications generally developed at the adolescent age of 10–15 years. Myositis and rhabdomyolysis distinctly occurred in children aged 5–8 years. Renal complications and shock rarely occurred and seemed to increase with age. The patterns of influenza complications differed significantly according to age and virus type. Dual influenza A and B infection and bacterial coinfection contributed to the effects and types of influenza complications. Early recognition of influenza complications is critical in initiating timely, organ-specific advanced therapies to improve influenza-associated outcomes.