

## Clinical impact of multiplex realtime PCR in respiratory tract infections

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Pathogen detection in respiratory tract infections is challenging due to lack of diagnostic gold standard with sufficient sensitivity and specificity. Viral infections likely contribute to a considerable portion of respiratory tract infections particularly in children, but also in adults. Despite widely accepted knowledge that viral infections do not respond to antibiotic therapy, many respiratory tract infections are nonetheless treated with antibiotics. This in turn is a major driver of antibiotic resistance and contributes to costs and side effects. Complicating the issue is that viruses may predispose to simultaneous or subsequent respiratory bacterial infections. Therefore better diagnostics and improved knowledge of healthcare providers is urgently needed.

Recently, novel molecular methods such as multiplex polymerase chain reaction (PCR) have been developed with higher sensitivity for viral pathogens. However, many questions regarding the clinical utility and impact of these assays remain as it is unknown if and how clinicians utilize these assays in their clinical decision making. Here we study whether identification of a virus by PCR from respiratory specimens had an effect on antiinfective management with initiation or discontinuation of antibiotic or antiviral therapy.

Primary project objectives:

Whether antiinfective therapy is modified according to results of multiplex PCR

Main secondary project objectives

Positivity rate and pathogen distribution of multiplex PCR

Whether the complication rate correlates with results of multiplex PCR and with antibiotic therapy

Length of antibiotic therapy in relation to identified pathogens

Whether the molecular methods correlate with traditional microbiological methods

Primary outcome:

Prevalence of change of antiinfective therapy according to results of multiplex PCR

Secondary outcomes:

Prevalence and of distribution of positive results of PCR;

Complications, mortality, length of stay depending on identified pathogens and presence or lack of antibiotic therapy;

Initiation and discontinuation of antibiotic and antiviral therapy;

Concordance with traditional microbiological cultures

<b>keywords</b>	viral; multiplex PCR; respiratory tract infection; impact
<b>type of project</b>	clinical studies
<b>status</b>	automatically closed
<b>start of project</b>	2014
<b>end of project</b>	2015
<b>study design</b>	Retrospective cohort study
<b>responsible person</b>	PD Dr. Werner Albrich