Symposium
LRTI: bacterial causes or do viruses also matter?

The microbial aetiology especially the role of the newly recognised viruses are not well known in adult lower respiratory tract infections in the community (CA-LRTI). We therefore investigated the role of S. pneumoniae (S.pn), Haemophilus spp (H.spp) and viruses in LRTI at the GPs office in the GRACE primary care network (PCN) using culture and real-time nucleic acid amplification tests (RT-NAATs) for the detection of bacterial and viral pathogens. From 10/2007-04/2010, a total of 3102 adult patients with CA-LRTI were enrolled in a prospective study in 16 PCNs in 12 European countries; a follow up visit was planned after 4 weeks. Nasopharyngeal flocked swabs (NPFS) (COPAN) and sputa for culture of S.pn and H.spp, were collected and frozen until transport to the central lab in Antwerp for nucleic acid (NA) extraction by the NucliSens EasyMAG (bioMérieux). Aliquots of NA extracts were sent to the collaborating LUMC and UMC-U for detection of influenzaviruses (INF) A/B, parainfluenzavirus (PIV)1-4, human rhinoviruses (HRV), human metapneumovirus (hMPV), respiratory syncytial virus (RSV), adenovirus (HAdV), Bocavirus (BOCA), coronaviruses (HCoV) OC43, NL-63, 229E, polyomaviruses KI and WU by in-house real-time PCR. In 3082/3102 patients a NPFS could be collected. An aetiologic agent was detected in 77% of patients: S.pn and H.spp in 9.1% and 14.9% respectively; a respiratory virus in 53.1%: HRV 18.6%, INF 11.1%, HCoV 7.4%, hMPV 4.4%, RSV 4.4%, polyomaviruses 2.8%, PIV 2.5%, HAdV 1.4%, BOCA 0.5%. For most viruses no significant differences were observed in prevalence between the 3 winter periods. In <5% of patients persistence of respiratory virus was seen in the follow up visit. This is the largest aetiologic study on LRTI in PCNs : in nearly 80% of the patients a microbial aetiology was found, over 50% presented with a viral infection: HRV's account for the majority . Use of RT-NAATs results in a significant improvement of the aetiologic yield in diagnosing LRTI.