Index

Note: Page numbers of article titles are in boldface type.

A

Adenovirus
  in CAP, 160
Amplified molecular diagnostic POC tests for viral infections, 56
Anaerobe(s)
  in aspiration pneumonia, 149–155
    animal model, 149–150
    described, 153
    evidence for, 153
    historical perspective on, 149–153
    recommendations, 154
Antibiotic(s)
  for CAP, 80
    MRSA–induced, 182–185
      introduction to, 182–183
      linezolid, 183–184
    outcomes related to, 211–228
      antimicrobial stewardship, 222–223
      β-lactams, 213, 219
      early transition to oral therapy, 220–221
      fluoroquinolones, 219–220
      future studies, 224
      macrolides, 219
      procalcitonin level measurement, 221–222
      recommendations, 223–224
      short course vs. long-term therapy, 211–220
    severe, 133–147
      adjunctive therapies, 137–140
      corticosteroids with, 138–139
      described, 135–137
      macrolides, 136–137
      MRSA related to, 136
      Pseudomonas aeruginosa related to, 136
      statins with, 139–140
Antibiotic resistance
  effects on Streptococcus pneumoniae–related CAP, 87–97. See also Community-acquired pneumonia (CAP), Streptococcus pneumoniae–related, antibiotic resistance effects on
Antimicrobial agents. See specific agents and Antibiotic(s)

Aspiration pneumonia
   anaerobic bacteria in, 149–155. See also Anaerobe(s), in aspiration pneumonia
cultures in, 151

B
β-lactam(s)
   for CAP
      short course of, 213, 219
macrolide with
      for CAP in hospitalized patients, 115–132
         studies related to, 123–125
resistance to
      effects on Streptococcus pneumoniae–related CAP, 88–90
         relevance of, 91–92
Bacterial pneumonia
   viral pneumonia vs., 165–166
Biomarker(s)
in CAP, 19–31
   advantages of, 20–21
   in defining need for antibiotic therapy, 20–23
   in defining prognosis and site-of-care decisions, 23–26
   in defining site of care, 26
      described, 21–22
   disadvantages of, 21
   in guiding duration of therapy, 26–28
   how and when to use, 28–29
   limitations of, 22–23
   in prognosis and complications, 23–25
   types of, 20
      for nonresponding CAP, 198–199
Blood cultures
   in CAP management, 79–80
Bordetella pertussis
   molecular amplification assays for, 60
Bronchoscopy
   fiberoptic
      for nonresponding CAP, 197–198
C
CAP. See Community-acquired pneumonia (CAP)
Cardiovascular events (CVEs)
   clinical failure in patients with CAP related to, 205–210
      within 30 days’ follow-up, 207–208
         described, 205–206
      at long-term follow-up, 208
   terminology related to, 206–207
   types of, 205
Children
   respiratory viruses in CAP in, 164
Chlamydia pneumoniae
  molecular amplification assays for, 60, 61
Clindamycin
  in aspiration pneumonia, 150–151
Clinical failure
  terminology related to, 206–207
Clinical scoring tools
  in CAP, 33–48
  long-term outcomes, 44
  need for, 33–34
  outcomes during 30-day follow-up, 42–44
  outcomes during hospitalization, 34–42
    clinical failure, 34
    clinical stability, 38–40
    ICU admission, 34–37
    in-hospital mortality, 37–38
    length of hospitalization, 40–42
    nonresolving pneumonia, 40
Community-acquired pneumonia (CAP)
  biomarkers in, 19–31
  clinical failure in patients with
    CVEs and, 205–210. See also Cardiovascular events (CVEs), clinical failure in
    patients with CAP related to
  clinical outcomes of patients with
    clinical scoring tools in predicting, 34–44. See also Clinical scoring tools, in CAP
  clinical scoring tools in, 33–48. See also Clinical scoring tools, in CAP
  described, 19–20, 87–88, 134, 211–212
  diagnosis of, 49–51, 189–190
    problem associated with, 51
  in hospitalized patients
    management of
      empiric therapy in
        β-lactam plus macrolide, 115–132
        fluoroquinolone in, 115–132
  impact of, 72
  incidence of, 71–72, 211
  management of antibiotics in
    outcomes related to, 211–228. See also Antibiotic(s), for CAP, outcomes related to
  empiric therapy for
    β-lactam plus macrolide in hospitalized patients, 115–132
    fluoroquinolone in hospitalized patients, 115–132
  empiric therapy for atypical pathogens in, 99–114
    doxycycline vs. macrolides, 107
    evidence against, 101–103
    evidence for, 103–104
    FOCUS trials, 108
    future studies related to, 110
    interpretation of evidence, 108–109
    introduction to, 99–101
Community-acquired (continued)

recommendations related to, 109–110
studies related to, 105–108
guidelines in, 71–86
ICU hospitalized patients, 77–78
non–ICU hospitalized patients
length of stay and costs, 75–77
mortality data, 74–75
readmission rates, 77
time to clinical stability, 77
outpatient management, 72–73
molecular tests in, 49–69. See also Molecular tests, in CAP management
quality measures in, 71–86
antibiotics, 80
blood cultures, 79–80
influenza vaccination, 80–81
oxygen, 81
pay for performance using quality indicators effects on outcomes, 81–82
pneumococcal vaccination, 78–79
smoking cessation, 79
mixed infections in, 165
mortality associated with, 115
MRSA and, 177–188. See also Methicillin-resistant Staphylococcus aureus (MRSA),
CAP due to
nonresponding
defined, 190
nonresponding patient with
biomarkers for, 198–199
causes of, 192–194
epidemiology of, 192–194
fiberoptic bronchoscopy for, 197–198
incidence of, 192
management of, 189–203
case study, 200–201
future studies in, 200
recommendations for, 195–199
therapeutic attitude in, 199–200
microbiology for, 196–197
prognosis for, 192
radiology for, 197
risk factors for, 194–195
terminology related to, 190–192
prevalence of, 49, 71, 115
respiratory viruses in, 157–175. See also Respiratory virus(es), in CAP severe
described, 134
management of
antimicrobial agents in, 133–147. See also Antibiotic(s), for CAP, severe
Streptococcus pneumoniae–related
antibiotic resistance effects on, 87–97
β-lactams, 88–90
breakpoints in, 93
clinical trials related to, 92–93
confusion related to, 90–91
diagnostic testing related to, 93–94
macrolides, 90
relevance of, 91–92
solution to, 92–94

Corticosteroids
antibiotics with
for severe CAP, 138–139
CVEs. See Cardiovascular events (CVEs)

D
DFA testing. See Direct fluorescent antibody (DFA) testing
Direct fluorescent antibody (DFA) testing
for viral infections, 53
Doxycycline
macrolides vs.
for CAP, 107

E
Empiric therapy
for atypical pathogens in CAP, 99–114. See also Community-acquired pneumonia (CAP), management of, empiric therapy for atypical pathogens in

F
Fiberoptic bronchoscopy
for nonresponding CAP, 197–198
FilmArray technology
for viral infections, 56–57
Fluoroquinolone(s)
for CAP
in hospitalized patients, 115–132
studies related to, 117–123
short course of, 219–220
resistance to
effects on Streptococcus pneumoniae–related CAP
relevance of, 92

G
GeneXpert system
for viral infections, 57–59

H
HCAP. See Health care–associated pneumonia (HCAP)
Health care–associated pneumonia (HCAP), 1–18
concept of, 2–3
defined, 1
Health (continued)
described, 2
evidence of
interpretation of, 14–15
in identifying patients with pneumonia at risk for antibiotic-resistant pathogens
alternatives to, 11–14
microbiological involvement in, 3–6
recommendations for, 14–15
studies needed for, 15
subcategories of
drug-resistant pathogens in
risk factors for, 6–11
Hemodialysis
as risk factor for drug-resistant pathogens in subcategories of HCAP, 9–10
hMPV. See Human metapneumovirus (hMPV)
Home health care
as risk factor for drug-resistant pathogens in subcategories of HCAP, 10
Hospitalization
as risk factor for drug-resistant pathogens in subcategories of HCAP, 7
Human metapneumovirus (hMPV)
in CAP, 159

I
Immunocompromised hosts
PPV in, 233
Immunosuppression
as risk factor for drug-resistant pathogens in subcategories of HCAP, 10–11
Infiniti system
for viral infections, 59
Influenza vaccination
in CAP management, 80–81
Influenza virus
in CAP, 159
treatment of, 166–167

J
Jaguar system
for viral infections, 59

L
Legionella pneumophila
CAP due to
empiric therapy for
studies related to, 106
molecular amplification assays for, 62
Linezolid
for MRSA–induced CAP, 183–184
Macrolide(s)
\[ \beta\text{-lactam with} \]
- for CAP in hospitalized patients, 115–132
  - studies related to, 123–125
- for CAP
  - severe, 136–137
  - short course of, 219
doxyccyclines vs.
- for CAP, 107
- for mild pneumonia, 94
resistance to
  - effects on *Streptococcus pneumoniae*–related CAP, 90
    - relevance of, 92
Methicillin-resistant *Staphylococcus aureus* (MRSA)
- antibiotics for severe CAP and, 136
- CAP due to, 177–188
  - evidence against, 178–179
  - evidence for, 179–180
    - interpretation of, 180
    - recommendations based on, 181–182
  - future studies related to, 182
  - introduction to, 178
  - treatment of, 182–185. See also Antibiotic(s), for CAP, MRSA–induced
Mixed pneumonia
- viral pneumonia vs., 165–166
Molecular tests
- in CAP management, 49–69
  - for bacterial infections, 60–63
    - FDA-cleared molecular amplification assays, 60–62
    - non–FDA-cleared molecular assays, 62–63
diagnostic test considerations, 52
- evidence-based, 63–64
- future studies, 64
requirements of molecular assays which may affect patient care, 51–52
- for viral infections, 52–59
  - DFA testing, 53
  - non–POC FDA-cleared molecular assays, 53–56
  - non–FDA-cleared molecular diagnostic tests, 59
- RADTs, 52–53
MRSA. See Methicillin-resistant *Staphylococcus aureus* (MRSA)
Multiplex PCR assays
- for viral infections, 53–55
Multiplex PCR-electrospray ionization mass spectrometry platform for viruses
- for viral infections, 59
*Mycobacterium tuberculosis*
- molecular amplification assays for, 60
*Mycoplasma pneumoniae*
- CAP due to
  - empiric therapy for
Mycoplasma (continued)
  studies related to, 105–106
  molecular amplification assays for, 60, 61

N
Non-POC FDA-cleared molecular assays
  for viral infections, 53–56
Non–severe acute respiratory syndrome coronaviruses
  in CAP, 160–161
Nursing home care
  as risk factor for drug-resistant pathogens in subcategories of HCAP, 7–9

O
Oxygen
  in CAP management, 81

P
Parainfluenza virus
  in CAP, 160
PCV. See Protein-conjugate polysaccharide vaccine (PCV)
Pneumococcal polysaccharide vaccine (PPV)
  in pneumococcal disease prevention, 231–233
  in immunocompromised persons, 233
PPV
  revaccination with, 233–234
  recommendations for use, 233
Pneumococcal vaccination
  in CAP management, 78–79
  in pneumococcal disease prevention, 229–241
  available vaccines, 230
  PCV, 234–237. See also Protein-conjugate polysaccharide vaccine (PCV)
  PPV, 231–234. See also Pneumococcal polysaccharide vaccine (PPV), in
  pneumococcal disease prevention
  described, 230
  history of, 230–231
  newer vaccines, 238
Pneumonia(s). See also specific types
  aspiration. See Aspiration pneumonia
  bacterial
  vs. viral pneumonia, 165–166
  categories of, 71
  community-acquired. See Community-acquired pneumonia (CAP)
  described, 71
  health care–associated, 1–18. See also Health care–associated pneumonia (HCAP)
  mild
  management of
  macrolides in, 94
  mixed
  vs. viral pneumonia, 165–166
viral
  vs. mixed or bacterial pneumonia, 165–166
PPV. See Pneumococcal polysaccharide vaccine (PPV)
Protein-conjugate polysaccharide vaccine (PCV)
  in pneumococcal disease prevention, 234–237
  controversies/issues related to, 237
  described, 234
  effects of, 235–236
  PCV13
  recommendations for, 237
Pseudomonas aeruginosa
  antibiotics for severe CAP and, 136

R
RADTs
  for viral infections, 52–53
Respiratory syncytial virus (RSV)
  in CAP, 158–159
Respiratory virus(es)
  in CAP, 157–175
  adenovirus, 160
  in adults, 164–165
  in children, 164
  described, 157–158
  future directions in, 168–169
  hMPV, 159
  influenza virus, 159
  treatment of, 166–167
  mixed infections, 165
  non–severe acute respiratory syndrome coronaviruses, 160–161
  parainfluenza virus, 160
  rhinovirus, 161–162
  RSV, 158–159
  treatment of, 166–168
Respiratory virus plus, Verigene Respiratory Virus Nucleic Acid Test
  for viral infections, 55–56
ResPlex technology
  for viral infections, 59
Rhinovirus
  in CAP, 161–162
RSV. See Respiratory syncytial virus (RSV)

S
Smoking cessation
  in CAP management, 79
Staphylococcus aureus
  methicillin-resistant. See Methicillin-resistant Staphylococcus aureus (MRSA)
  molecular amplification assays for, 60
Statin(s)  
  antibiotics with  
  for severe CAP, 139–140  
*Streptococcus pneumoniae*  
  CAP due to  
  antibiotic resistance effects on, 87–97. *See also* Community-acquired pneumonia (CAP), *Streptococcus pneumoniae*-related, antibiotic resistance effects on molecular amplification assays for, 63  

**T**  
Treatment failure  
defined, 190  

**V**  
Vaccination  
  influenza  
  in CAP management, 80–81  
  pneumococcal  
  management of, 78–79  
  in pneumococcal disease prevention, 229–241. *See also* Pneumococcal vaccination, in pneumococcal disease prevention  
Vaccine(s)  
  pneumococcal, 230. *See also* Pneumococcal vaccination, in pneumococcal disease prevention  
  PPV, 231–233  
  in immunocompromised persons, 233  
  recommendations for use, 233  
  revaccination with, 233–234  
  protein-conjugate polysaccharide, 234–237. *See also* Protein-conjugate polysaccharide vaccine (PCV)  
Viral infections  
  diagnostic tests for, 52–59. *See also* Molecular tests, in CAP management, for viral infections  
Viral pneumonia  
  mixed/bacterial pneumonia vs., 165–166  

**X**  
xTAG RVP  
  for viral infections, 55