

Index

A

Abatacept, 16, 134, 136
ACPA. *See* Anti-citrullinated protein antibodies (ACPA)
ACR/EULAR classification criteria, 11, 12
Acute bronchopneumonia, 105
Acute respiratory distress syndrome (ARDS), 134
Aggregatibacter actinomycetemcomitans, 2
Airways disease
 lower airway disease, 166–168
 prevalence and cumulative incidence, in RA patients, 52–54
 upper airway disease, 166
Alveolar protein biomarkers, 64
Anakinra, 138
Anti-citrullinated protein antibodies (ACPAs), 9, 22, 23, 33
Anti-fibrotic treatments, 140–141
Antinuclear antibodies (ANAs), 10
Apical fibrobullous disease, 169
Autoantibodies, 21, 24, 33, 34, 62
Autoantibodies, RA-ILD, 62
Azathioprine, 140

B

B cells, in rheumatoid arthritis, 24
Biomarkers, RA-ILD, 61, 62
 alveolar protein biomarkers, 64
 autoantibodies, 62, 63
 experimental serum biomarkers, 63, 64
 genetic markers, 64
Bone erosion, 25–26
British Society for Rheumatology Biologics Register for RA (BSRBR-RA), 133

Bronchiectasis, 52–54, 80
Bronchiolar disease, 167
Bronchiolocentric fibrosis, 96, 97

C

Caplan's syndrome, 83, 165
Carbamylated proteins, 2
Chronic inflammatory polyarthritis, 4
Citrullinated proteins, 2
Clinical Disease Activity Index, 14
Constrictive bronchiolitis. *See* Obliterative bronchiolitis (OB)
Cricoarytenoid arthritis, 9
Cricoarytenoiditis, 166
Cyclophosphamide, 141
Cytokines, 24, 26

D

Desquamative interstitial pneumonia (DIP), 76, 99
Difference in-gel electrophoresis (DiGE) techniques, 63
Diffuse alveolar damage, 99
Disease Activity Score-28 joints, 14
Drug reaction, 103–105
Drug reaction with eosinophilia and systemic symptoms (DRESS), 129
Drug-induced pulmonary toxicity, 84

E

Early undifferentiated inflammatory arthritis, 13
ELISA assays, 33

- Entrapment neuropathies, 8
 Etanercept, 51
 Extra-articular manifestations, 7, 9, 26, 27, 45
- F**
 Felty's syndrome, 8
 Follicular bronchiolitis, 79, 99, 100, 168
- G**
 Genetic markers, RA-ILD, 64
 Genetic risk factors, RA, 20–21
 Genome-wide association studies (GWAS), 2
 Glucocorticoids, 140
- H**
 Health assessment questionnaire (HAQ), 14
 High-resolution computed tomography (HRCT), 110
 Hilar lymphadenopathy, 170
 Human leukocyte antigen (HLA) proteins, 36
 Humoral immunity, RA, –22, 21
 Hydroxychloroquine, 129
- I**
 Idiopathic interstitial pneumonias (IIP), 144
 IgA plasmablasts, 34
 IL-1, 25
 ILD. *See* Interstitial lung disease (ILD)
 Inflammatory joint destruction, 45
 Interstitial fibrosis, patterns of, 94, 99
 Interstitial inflammation, patterns of, 94, 99
 Interstitial lung disease (ILD), 46–52, 62–64, 122, 163
 biomarkers, 61, 62
 alveolar protein biomarkers, 64
 autoantibodies, 62–63
 experimental serum biomarkers, 62–64
 genetic markers, 64
 clinical predictive modeling, 64–66
 epidemiology, 73
 imaging, 73–76
 imaging and prognostication, 76–78
 phenotypes, 59–60
 prevalence
 and cumulative incidence in RA patients, 46, 47
 in patients with respiratory symptoms, 46–48
 in unselected patients, 48
 using CXR, 48–49
 using multimodality approach, 48
 using pulmonary function tests (PFTs), 48
 risk factors, 49, 59–62, 73
 age, 50
 genetics, 51
 RA disease activity, 50–51
 RA disease duration, 51
 RA medications, 51
 RA-related antibodies, 52
 sex, 50
 smoking, 49–50
 subclinical disease, 65, 66
 Interstitial pneumonia with autoimmune features (IPAF), 39
 Intrathoracic lymphadenopathy, 170
- J**
 Janus kinase (JAK) inhibitors, 138, 139
- L**
 Large granular lymphocyte (LGL) syndrome, 8
 Late onset rheumatoid arthritis (LORA), 13
 Leflunomide, 127, 128
 Lower airway disease, 166–168
 Lung transplantation, 143, 144
 Lymphocytic interstitial pneumonia (LIP), 76
- M**
 Mediastinal lymphadenopathy, 170
 Methotrexate, 15, 16
 Methotrexate (MTX), 15, 16, 51, 124
 pneumonitis
 classification of, 124–125
 prevalent RA-ILD and, 124–126
 progression of RA-ILD on, 127
 toxicity, 84, 104
 Methotrexate-induced lung toxicity, 84
- N**
 Necrobiotic nodules, 82
 Non-specific interstitial pneumonia (NSIP), 74, 75, 96
- O**
 Obliterative bronchiolitis (OB), 79, 99, 101
 Obstructive lung disease, 52, 53
 Organizing pneumonia (OP), 75–77, 97, 98

P

- Patient Activity Scale, 14
- Periodontitis, 20
- Pirfenidone, 140
- Pleural disease, 54, 80, 81, 101, 168
- Pneumocystis pneumonia, 106
- Preclinical rheumatoid arthritis, 32, 33
 - autoantibody and inflammatory evolution, 33–34
- Predictive modeling, RA-ILD, 65, 66
- Pseudochylothorax, 169
- Pulmonary amyloidosis, 169
- Pulmonary vascular disease, 168

R

- RA. *See* Rheumatoid arthritis (RA)
- RA-ILD. *See* Rheumatoid arthritis-associated interstitial lung disease (RA-ILD)
- RA-related autoimmunity
 - development model, 38
 - iBALT, 35
 - inflammation and citrullination, 38
 - inhaled factors, 35
 - mucosal generation, 37
 - symptomatic lung disease, 36
- Remitting seronegative symmetrical synovitis with pitting edema (RS3PE syndrome), 13
- Reverse immunophenotyping, 63
- RF. *See* Rheumatoid factor (RF)
- Rheumatoid arthritis (RA), 2, 3, 35–37, 46
 - ACR/EULAR classification criteria, 11, 12
 - airways disease, 52–54
 - autoantibodies, 20–24
 - B cells in, 24
 - biologic agents, 15
 - biologic therapies, 17
 - bronchiectasis/bronchial dilation, 52–54
 - characterization, 32
 - clinical variants, 12–13
 - cytokines, 24–26
 - diagnosis, 11
 - disease activity and disability measures, 12–14
 - early arthritis and peri-arthritis, 4–5
 - epidemiology, 4
 - etiology, 1, 19
 - environmental risk factors, 2–3
 - genetic factors, 2
 - host factors, 3
 - extra-articular manifestations, 1, 5–9, 24–27, 45
 - future studies, 38–40
 - genetic risk factors, 20
 - hand radiographs, 11
 - hematologic manifestations, 8
 - histologic findings in, 102–103
 - humoral immunity, 21–23
 - ILD (*see* Interstitial lung disease (ILD))
 - immune response, 21
 - infection in, 105–106
 - inflammatory joint destruction, 45
 - joint involvement, 4
 - laboratory findings, 7–10
 - late articular and periarticular sequelae, 4–6
 - lung role, in initiation of, 34
 - iBALT, 35
 - inhaled factors, 35–36
 - RA-related autoimmunity, generation of, 36–37
 - symptomatic lung disease, 36
 - magnetic resonance imaging, 10
 - model for RA development, 27
 - morbidity and mortality, 17
 - natural history, 34
 - pathogenesis, 3
 - pathophysiology, 24
 - persistent symmetric polyarthritis, 4
 - phases, 32
 - plain radiographs, 10
 - pleural disease, 52–55
 - prevalence, 45
 - preventative therapy, 16
 - prognostic factors, 15
 - pulmonary manifestations in, 164
 - RA-related lung disease, epidemiologic studies in, 45
 - surgical lung biopsies in, 94
 - surgical procedures, 16
 - susceptibility, 2
 - T cells in, 21–24
 - treatment, 15–16
 - ultrasonography, 10
 - Rheumatoid arthritis-associated interstitial lung disease (RA-ILD)
 - clinical presentation, 111
 - diagnostic evaluation of patients, 111–113
 - epidemiology of, 109–110
 - natural history and prognosis, 114
 - phenotypes, 114
 - risk factors, 110–111
 - Rheumatoid effusion, 101
 - Rheumatoid factor (RF), 9, 22

Rheumatoid lung nodules, 164, 165
Rheumatoid nodules, 7, 97, 98
Rheumatoid nodulosis, 13
Risk factors, RA-ILD, 49, 60, 61
 age, 50
 genetics, 51
 RA disease activity, 50
 RA disease duration, 51
 RA medications, 51
 RA-related antibodies, 52
 sex, 50
 smoking, 49
Rituximab, 16, 134

S

Secondary Sjögren's syndrome, 7
Seronegative rheumatoid arthritis, 13
Serum biomarkers, 63, 64
Simplified Disease Activity Index, 14
Subclinical disease, RA-ILD, 65, 66
Sulphasalazine, 128–129
Symptomatic therapy, 15
Synovial fluid analysis, 10

Synthetic disease-modifying antirheumatic
 drugs (sDMARD), 15, 16
Systemic vasculitis, 168

T

T cells, in rheumatoid arthritis, 23, 24
Thoracic cage disorder, 170
TNF inhibitor pulmonary toxicity, 85
TNF α , 25. *See also* Cytokines
Tocilizumab, 16, 136, 137
Tofacitinib, 15
Tumour necrosis factor inhibitors (TNFis),
 130–133

U

Upper airway disease, 166
Usual interstitial pneumonia (UIP), 74, 95

V

Vascular disease, 101
 Vasculitis, 8