
Index

A

- AAN. *See* Aristolochic acid nephropathy (AAN)
- ACT. *See* Adjuvant chemotherapy (ACT)
- Active surveillance, 211
- Adjuvant chemotherapy (ACT)
 - CALGB, 391
 - disease-free survival and rates, 390
 - GC-based chemotherapy, 391
 - harbor adverse features, final pathology, 407
 - non-cross-resistant, 392
 - perioperative chemotherapy (*see* Perioperative chemotherapy)
 - randomized clinical trials, 391
 - residual micrometastatic disease, 408
 - SOGUG, 391
 - systemic treatment, micrometastasis, 390
- Adjuvant therapy. *See* Adjuvant chemotherapy (ACT)
- Alternative treatments, intravesical gemcitabine, 267
- American Urological Association (AUA), 280, 282–287
- 5-Aminolevulinic acid (5-ALA)
 - cost analysis, 161
 - intravesical application, 159
 - PDD, 160
 - red fluorescence, 159–160
 - tissue insolubility, 160
- Anthracyclines, 228
- Anti-angiogenic strategies, bladder cancer, 150–151
- Antitubercular antibiotics
 - side effects, BCG treatment, 273
 - spectrum antibiotic coverage, 274
- Apaziquone, 229, 369, 393–395
- Aristolochic acid nephropathy (AAN)
 - aggressive screening, 26
 - progressive renal interstitial fibrosis, 24
- AUA. *See* American Urological Association (AUA)

B

- Bacillus Calmette–Guérin (BCG). *See also* Intravesical BCG
 - anti-tuberculosis vaccine, 230
 - BCG-refractory disease, 253
 - chemotherapy, 218
 - device-assisted therapy, 252–253
 - EAU and AUA, 231

- European randomized control trial, 240
- failure
 - aggressive treatment, 268
 - cystectomy, 268
 - definition, 266
 - doses, 266
 - in elderly, 266
 - EORTC meta-analysis, 265–266
 - gemcitabine, 250–251, 267
 - INF-alfa, 267
 - and interferon, 246–248
 - intermediate-and high-risk patients, 257
 - intravesical docetaxel, 251
 - MMC, 249–250
 - multifocal disease, 257
 - prediction, 267
 - prognostic factors, 259
 - recurrence and progression, NMIBC, 265
 - subgroup categories, 267
 - SWOG maintenance schedule, 265
 - TaG3 and T1G3 patients, 258
 - TC, 268
 - treatment options, 267
 - valrubicin, 248
- FISH, 241
- gemcitabine, 211
- immunosuppressed patients, 233
- immunotherapy
 - beneficial urinary cytokines, 272
 - colony forming units (CFU), 272
 - immunologic and infectious, 271
 - improved, 251–252
 - intolerant patients, 274–275
 - intravesical, 239
 - moderate, 273–274
 - prevention, 272–273
 - severe, 274
 - urinary frequency and dysuria symptoms, 271
 - urologists, 272
- induction and maintenance therapy, 219
- inflammatory conditions, 165
- intermediate-risk disease, 231
- intravesical therapy, 219
- low-risk bladder cancer, 232
- mitomycin C, 210

- Bacillus Calmette–Guérin (BCG). *See also* Intravesical BCG (*cont.*)
 mycobacterium bovis, 150
nab-Paclitaxel, 251
 NMIBC, 255–256
 PDD, 194
 prognostic factors, 253–255
 recurrence, 89, 245–246
 re-induction, 240
 RE-RTU, 194
 systemic toxicity, 227
 tumor progression, 204
 TUR, 115
 TURBT, 215
 UCB, 245
 urothelium, 32
- BCG-refractory disease, 211, 245, 248, 251, 253
- Benign urinary tract diseases
 calculi, 42
 infectious and noninfectious causes, 42
 polyomavirus (decoy cell) cells, 42
 therapeutic changes, 42–43
 UroVysion® assay, 43
- Biomarkers
 for bladder cancer, 156–157
 BTA, 157
 ELISA, 157
 FISH, 158
 ImmunoCyt®, 157–158
 nuclear matrix protein 22 (NMP22), 156
 UroVysion® test, 158
- Bladder cancer. *See also* Chemoradiotherapy; Radical cystectomy (RC); Screening
 African-Americans, 45
 anti-angiogenic strategies, 150–151
 BCG failure (*see* Bacillus Calmette–Guérin (BCG))
 carcinogenesis (*see* Molecular Carcinogenesis)
 coherent anti-stokes Raman scattering (CARS) microscopy, 166
 confocal laser endomicroscopy (CLE), 165
 cytology specimens, 31
 description, 155
 disparities care, 86–88
 epigenetic changes (*see* Epigenetics)
 familial and genetic risk, 46–47
 genetic instability, 47–48
 hematuria (*see* Hematuria)
 HRQOL (*see* Health related quality of life (HRQOL))
 imaging (*see* Imaging)
 immunotherapy strategies, 150
 metastatic and recurrent
 prediction tools, 133–134
 prognostic factors, 132–133
 mortality, 3–9
 natural history, 9–13
 NBI, 163–165
 NMIBC (*see* Non-muscle invasive bladder cancer (NMIBC))
 nodal staging, 414–415
 non-invasive diagnostic techniques, 156–158
 OCT, 162–163
 PDD, 159–162
 positive lymph nodes (*see* Positive lymph nodes)
 quality improvement, 90–92
 quality of care (*see* Quality of care)
 signaling pathway blockade
 Aurora A kinase and polo-like kinase 1, 150
 cell-cycle control, loss, 149
 FGFR3, 149
 genetic alterations, 147–148
 HSPs, 150
 monoclonal antibodies, 149
 OGX427, 150
 oncogenic alterations, 148–149
 PI3K/Akt/mTOR pathway, 148
 small molecule tyrosine kinase inhibitors, 149
 smoking, 46
 and socioeconomic status, 85–86
 surgical pathology diagnosis, 31
 tissue-based diagnosis, 31
 UCC, 45–46
 urinary (*see* Urinary diversion)
- BladderChek NMP-22 test, 19–20
- Bladder preservation therapy
 clinical staging, 381
 components, 460
 Cyberknife treatment, 383–384
 high-grade T1, 381
 IGRT, 383
 intensity modulated radiation therapy, 383
 maximal TUR, chemoradiation, 460
 muscle-invasive, 459
 partial cystectomy, 460
 quality of life, 384
 radiation therapy after maximal TURBT, 381
 radical TUR alone, 460
 rectal and bowel toxicity, 382
 surveillance, 383–384
 trimodality treatment, 382
 unselected population, 380–381
- Bladder tumor antigen (BTA), 20, 157
- Bladder tumour
 CT scan, 187
 cystoscopy schedule, 185–186
 ICUD, 183
 orthotopic substitution, 183
 surveillance cystoscopy, 186
 ultrasound, 187
 urinary markers, 187
 UTT, 187
- Bowel segment selection
 ileum and colon, 340
 jejunum, 340
 stomach, 340
 for urinary diversion, factors, 340
 BTA. *See* Bladder tumor antigen (BTA)

C

- Carcinoma in-situ (CIS)
 cytology, 241
 FISH, 241
 intermediate-and high-grade disease, 239
 intravesical BCG, 239
 negative surveillance evaluation, 242
 PDD, 240
 recurrence and progression, 240
 routine re-staging transurethral resection, 240
 standard protocol, 240
 urinary markers, 241
- CFU. *See* Colony forming units (CFU)
- Chemoradiation. *See* Chemoradiotherapy
- Chemoradiotherapy
 with cisplatin, 395
 combined modality treatment, 361–363
 cystectomy, 396–397
 multimodality therapies, 395
 neoadjuvant CMV, 397
 phase I/II chemoradiation trials, 396
 transitional-cell carcinoma, bladder, 361
 trimodality approach (*see* Trimodality approach)
- Chemotherapy
 adjuvant, 369
 administration, 12
 anthracyclines, 228
 apaziquone, 229
 and BCG, 32
 cisplatin-based, 382
 clinical response rates, 449
 combination therapy, 229
 concurrent, 368
 CT and MRI, 450–451
 EORTC trials, 10
 gemcitabine, 228
 high-grade, Ta tumors, 202
 induction, 368–369
 intravesical therapy, 203
 micro-metastases, 12
 MMC, 226–227
 NACT and NC (*see* Neoadjuvant chemotherapy (NAC))
 oncolytic adenovirus, 229
 patients with nodal metastases (*see* Nodal metastases)
 perioperative, 203
 postoperative instillation, 225
 radiation, 87–89 (*see also* Chemoradiotherapy)
 radiographic response, 451
 Southwest Oncology Group (SWOG) trial, 451
 systemic, 449
 taxanes, 228–229
 thiotepa, 227
 traditional PET, 451
 transurethral biopsy, 225
 TURBT, 203–204
 urothelial carcinoma, 450
- Cigarette smoking
 chemical compounds, 4–5
 population attributable risk, 4
 risk factor, 171
 smokers, current *vs.* never, 4–5
- CIS. *See* Carcinoma in-situ (CIS)
- Clinical practice guidelines, muscle-invasive bladder cancer, 457
- Clinical trials
 molecular markers, 146
 muscle invasive bladder cancer, 147
 oncology community, 145
 optimal trial design, 147
 pharmacokinetic studies, 145
 phase I trials, 145
 phase III trials, 146
 randomized phase II and III clinical trials, 147–148
 systemic cisplatin-based chemotherapy, 147
 toxicity profiles, 146
 tumor pre-and post-treatment, 147
 tumor vaccines, 145–146
- Coherent anti-stokes Raman scattering (CARS)
 microscopy, 166
- Colony forming units (CFU), 272
- Combined modality therapy
 bladder cancer, 362, 365–366
 centers, bladder preservation therapy, 361
 complete responders, 361
 MGH and RTOG, 362, 364
 radiochemotherapy regimen, 362–363
 schedule, combined modality therapy, 362–363
- Comparative effectiveness research, 105
- Complications. *See also* Short term complications
 BCG therapy, 272–273
 intracorporeal urinary diversion, 353, 355
 mucus plugging, 304
 open radical cystectomy, 304
 patients with orthotopic neobladders, 303
 perioperative and postoperative, 320–321
 radical cystectomy (RC), 333, 337–338, 425
 robot-assisted radical cystectomies (RARC), 320–321
 symptoms, 303
- Computed tomography (CT)
 low-grade T1 tumor, 216
 lymph nodes, 424, 450
 lymphography, 80–81
 muscle invasive bladder cancer
 bladder tumor, 66–67
 node positive disease, 67
 radiation exposure, 66
 right-sided bladder lesion, 66
 neoadjuvant chemotherapy, 64–65, 407–408
 nodal metastases, 414
 noninvasive disease
 cystoscopy/transurethral resection, 61
 hematuria evaluation, 63
 high-risk non-invasive disease, 62–63
 low-grade NMIBC, 62
 renal insufficiency/allergy, 61
 positron emission tomography (PET), 68–69
 staging, 60
 transurethral resection of bladder tumor (TURBT), 383
 urothelial carcinoma of bladder (UCB), 73, 76–77
 virtual cystoscopy (VC), 165
- Concomitant carcinoma in situ (CIS), 115
- Confocal laser endomicroscopy (CLE), 165–166

- Continent cutaneous diversions, 302
- Cost and cost-effectiveness research
description, 26
screening vs. no screening, 26
unnecessary work-ups, 27
urine marker tests, 26
- Cyberknife treatment, 383–384
- Cyclin-dependent kinase inhibitor 2A (CDKN2A), 52
- Cystectomy, lymph nodes, 425
- Cystitis
bacterial and viral, 32–33
infectious/noninfectious causes, 32
patient management, 34
polypoid and Malakoplakia, 33–34
- Cystoscopy
bladder biopsies, 186
first cystoscopy, 185
fluorescence, 159–160
low-grade NMIBC, 62
microscopic hematuria and atypical cytology, 172
3-month cystoscopy, 185
screening, 22
surveillance, 186
- Cytology
ICUD guidelines, 433
specimens
benign urinary tract diseases, 42–43
diagnosis, 39
lack of tissue-based orientation, 42
low-grade papillary urothelial carcinoma, 40–41
nomenclature/reporting, 40
types, 39–40
urothelial carcinoma, 41–42
urethral wash, 434
urine, 156
UUT surveillance, 432
- D**
- Device-assisted therapy, 252–253
- Differential diagnosis
cytology utility, 39
radiation therapy, 32
- Diffusion-weighted MRI (DW MRI), 74–75
- Dipstick hematuria testing, 19
- Disease progression
age, diagnosis, 112
BCG therapy failure, 205
and cancer-specific death, 202
CIS, 115
diagnosis, 201
gender, 113
high-grade NMIBC, 203
LVI, 115
muscle invasive disease, 206
obesity, 113–114
perioperative chemotherapy, 204
prevention, 204
smoking exposure, 114
tumor, 114, 204
- Disease recurrence. *See also* Disease progression
radical cystectomy (RC), surveillance strategy, 430
urethrectomy, 433
- Dynamic contrast-enhanced MRI (DCE MRI), 75–76
- E**
- Elderly, BCG failure, 266
- Enzyme-linked immunosorbent serologic assay
(ELISA), urinary biomarkers, 156–157, 195
- EORTC. *See* European Organization for Research and
Treatment of Cancer (EORTC)
- Epidemiology. *See* Mortality
- Epigenetics
CpG islands, 54
DNA methylation, 54
histones, 54
micro-RNAs, 54–55
recurrence and prognosis, 55
Ta and CIS pathways, 54
- European Association of Urology (EUA), 280–283,
285–287
- European Organization for Research and Treatment
of Cancer (EORTC)
BCG, 253, 257–259
carboplatin-gemcitabine, 393
CUETO, 185
intravesical chemotherapy, 116
intravesical regimens and guidelines, 254
isoniazid prophylaxis, 273
low-risk tumors, 218
non-muscle-invasive Ta and T1 bladder cancer, 10
recurrence and progression, nomogram prediction, 10
- Extended pelvic lymphadenectomy, 416
- Extracorporeal urinary diversion
anastomosis, 319
fascia, extraction incision, 318–319
surgeon, 318
- F**
- FC. *See* Fluorescence cystoscopy (FC)
- Female cystectomy
Douglas pouch incision, 298–299
tumor involvement, bladder neck, 298, 300
vaginal stump oversewing, 298, 300
- Fibroblast growth factor receptor-3 (FGFR-3)
bladder cancer cell lines, 51
ligand-independent dimerization, 50
papilloma, 50
PUNLMP, 50–51
tyrosine kinase receptor, 50
- First-line chemotherapy
cisplatin, 393
high-dose-intensity MVAC (HD-MVAC), 392
known active agents, 392
MVAC, 392–394
- FISH. *See* Fluorescence in situ hybridization (FISH)
- Flat lesions
CIS (*see* Flat urothelial carcinoma in situ (CIS))

- CK20, low-molecular weight cytokeratin, 35–36
- dysplasia, 34
- E-cadherin loss and increased Ki67, 36
- Flat urothelial carcinoma in situ (CIS)
 - conventional, 35–36
 - immunohistochemical stains, diagnosis, 35–36
 - micropapillary, 35–36
- Fluorescence cystoscopy (FC)
 - bladder cancer diagnosis, 156
 - bladder tumors, 218
 - intavesical MMC, 219
 - OCT, 162
 - PDD, 159–162
 - random bladder biopsies, 202
 - upper tract, 205
 - urine test/ IPSS, 22
- Fluorescence in situ hybridization (FISH)
 - atypical cytology, 158
 - bladder cancer, 174
 - carcinoma, 158
 - cytology, 24, 241
 - ImmunoCyt, 26
 - multi-target assay, 195
 - tumor recurrence, 195
 - urinary biomarkers, 158
 - urine dipstick testing, 24
 - urine markers, 20
 - urine tumor markers, 176
 - UroVysion® assay, 43
 - visible tumor, 158
- Follow up
 - bladder preservation, 460–461
 - false-positive study, 68
 - gemcitabine trial, 249
 - mitomycin C trial, 249
 - NMIBC, 183–184
 - risk stratification, 184–185
- G**
- Gemcitabine
 - apoptosis, 250
 - BCG-refractory disease, 211
 - chemotherapeutic agents, 369
 - cisplatin/carboplatin, 394
 - costs, 251
 - DNA replication, 267
 - mean recurrence-free survival, 250
 - metastatic/invasive urothelial cancer, 228
 - MMC, 228
 - side effects, 250
- Gender
 - age, 171
 - BCG failure, 256
 - demographic features, 442
 - epidemiologic and translational research, 119
 - health care delivery, 87
 - non-urothelial histology, 8
 - UCB, 113
- Gene expression
 - bladder cancer, 52
 - epigenetic changes, 54
 - micro-RNAs, 54
 - M-VAC chemotherapy, 132
 - prediction scoring system, 132
 - profiling, 37
 - transcription factors, 54
 - tumor's signature, 55
- General population
 - asymptomatic unselected population, 23
 - and heavy smokers, 20–21
 - long-term outcomes, 22
 - repetitive home screening with urine dipstick testing, 20
 - screening and control population, 20
 - urine tests, 22
- GoLYTELY® mechanical bowel preparations, 339
- H**
- Hautmann neobladder and chimney modification, 345–346
- Health care disparities
 - in bladder cancer, 86–87
 - contextual factors, 88
 - description, 87
 - muscle-invasive bladder, 87
 - population-based analyses, 87
 - race/ethnicity, 87
 - socioeconomic status, 88
- Health related quality of life (HRQOL). *See also* Quality of life (QOL)
 - in bladder cancer patients, 98–99
 - cost of survival, 95–96
 - diversion types, 104
 - health domains, 96–97
 - instruments, 99–101
 - non-muscle-invasive disease, 105
 - patient-centric assessment, 96
 - patient well-being, 96
 - RARC, 105
 - RC and urinary diversion, 104
 - response shift, 99
 - and SHIM, 105
 - status, 97
 - subjective metric, 97–98
- Heat shock proteins (HSPs), 150
- Hematuria
 - bladder biopsies, 176
 - cystoscopy, 172
 - diagnosis and risk factors, 171–172
 - imaging, 172
 - urine cytology (*see* Urinary cytology)
- High-grade non-muscle-invasive bladder cancer, 10–11
- High-grade Ta tumors
 - with CIS and, 287
 - first large, 280–281
 - low-grade, 284–285
 - multiple, low-grade, papillary, 282–284
 - multiple, recurrent, 281–282
 - persistent CIS despite induction and maintenance, 285–286

Histology

- and cytology, 42
- non-urothelial, 8
- urothelial carcinoma of bladder (UCB), 123
- variants, 459

I

ICUD. *See* International Consultation on Urological Disease (ICUD)

IGRT. *See* Image-guided radiotherapy (IGRT)

Ileal conduit, 301, 341–342

Image-guided radiotherapy (IGRT), 383

Imaging

- muscle invasive bladder cancer (*see* Muscle invasive bladder cancer)

NMIC

CT (*see* Computed tomography (CT))

MRI, 63–64

NC (*see* Neoadjuvant chemotherapy (NAC))

post-treatment cancer surveillance, 59

surveillance imaging, 69

tools, 158–159

UCB (*see* Urothelial carcinoma of bladder (UCB))

ImmunoCyt® test, 20, 157–158

Immunostains, 35

Immunotherapy

BCG, 231–232

chemotherapy, 203

DN24-02, 150

dose reduction and prophylactic antibiotics, 275

IFN, 233

IL-2 levels, 234

intravesical, 89

maintenance, 232

MCC, 233

mycobacterium bovis, 229

optimization, 232–233

PD-L1 expression, 150

preservation strategies, 287

side effects and management, 230–231

strategies, 150

TH1-related cytokines, 230

tumor grade, 121

urinary cytokines, 230

urinary frequency and dysuria, 271

urine culture and urinalysis, 230

Incidence. *See* Mortality

Indiana Pouch, 343–344

Instruments

AUA-SI, 101

baseline assessment, 101

best fit

disease-specific HRQOL, 103

factors, 101–102

general HRQOL, 102

health utility, 103–104

multidimensional construct, 102

standardized instruments, 101

convergent validity, 101

KPS, 99

Likert scales, 100

multistep process, 100

neurogenic bladder patients, 100

psychometric analysis, 100

treatment improvement, 100

Interferon-alfa-BCG, 267

International Consultation on Urological Disease

(ICUD), 277, 281–282, 284–287,

430, 457

Intracorporeal urinary diversion

avoiding complications, 353, 355

hybrid techniques, 353

“Marionette technique”, 353–354

small bowel and ileum segment, 353

Intravesical BCG

blue light cystoscopy, 240

CUETO trials, 116

cystectomy, 182

FC, 218

FISH, 241

local and systemic side effects, 246

low-grade Ta tumors, 283

MMC, 282

recurrence and progression rates, 10

TURBT, 218

Intravesical chemotherapy

EAU, 283

EORTC trials, 116

meta-analysis, 210

MMC, 226

tumor recurrence, 225

TURBT, 89

valrubicin, 286

Intravesical therapy

bladder cancer, 223

BTA tests, 157

chemotherapy, 225–229

cystectomy, 205

cystoscopy, 219

doxorubicin, 210

EORTC trials, 10

HGTa, 281

host’s defense mechanisms, 114

ImmunoCyt, 158

immunotherapy, 229–234

induction cycles, 284

meta-analysis, 210

multicenter randomized trial, 210

multifocal disease, 381

nab-paclitaxel, 251

NMIBC, 209

principles, 223–225

radical cystectomy, 253

recurrence and progression rates, 251

recurrences, 209

SEER-medicare data, 89

Ta/T1 tumors, 11

TURB, 113

visible tumor, 203

Invasive bladder cancer, open radical cystectomy, 293

Invasive urothelial carcinoma, 36–37

K

Koch Pouch, 343–344

L

LMP. *See* Low malignant potential (LMP)

LND. *See* Lymph node dissection (LND)

Location

- bladder tumor, 217
- lateral and posterior bladder walls, 217
- lesion, 31
- lymph node, 122
- metastatic disease, 78
- solitary tumor, 460
- urothelial carcinoma, 43

Long-term complications, open radical cystectomy, 304

Low-grade bladder cancer, 9, 11, 47

Low-grade non-muscle-invasive bladder cancer

- cystoscopic surveillance and repeated transurethral resections, 9
- EORTC nomogram, 10
- microscopic and gross hematuria, 9

Low-grade Ta tumor

- active surveillance, 211
- BCG *versus* mitomycin C, 210
- bladder cancer, 209
- intravesical chemotherapeutic agents, 211
- intravesical therapy, 209–210
- NMIBC, 209
- radical cystectomy, 211–212
- TUR, 209

Low-grade T1 tumor

- CIS, 219
- high-risk papillary non-muscle-invasive disease, 219
- muscle invasive disease, 219
- prognostic factors
 - aggressive tumors, 217
 - bacillus Calmette–Guérin instillation therapy, 215
 - bladder wall perforation, 218
 - cancer-free survival, 215
 - detrusor muscle, 217
 - FC, 218
 - grade and stage, 217
 - intravesical therapy, 219
 - local pathologist, 217
 - muscle invasion and metastasis, 216
 - older age, 215
 - random biopsy, 218
 - resection loop, 216
 - reviewed pathology, 218
 - T1 bladder cancer, 217
 - ultrasound/CT scan, 216
 - women, 216
- re-resection, 220

Low malignant potential (LMP), 3

Lymphadenectomy extent

- dissection analysis, 416–417
- patient/provider factors, 415
- positive lymph nodes, 424–425
- sentinel node identification, 413
- surgical lymph node mapping, 411

Lymph node(s)

count

- node-positive and node-negative patients, 411
- pathologic examination, 415

CT/MRI, 450

imaging modality, 451

mapping

- sentinel, 417
- surgical, 411
- pelvic, 452–453
- positive bladder cancer, 449

Lymph node dissection (LND)

- analysis, 416–417
- description, 411
- frozen section analysis, 417
- gross lymphadenopathy, 417
- long-term survival, 418
- and nodal metastases (*see* Nodal metastases)
- nodal staging, 414–415
- open radical cystectomy, 300
- phase III trial data, 418–419
- quality, 415–416
- robotic approach, 418

Lymphography

PET/CT

- ¹¹C-choline, 80–81
- cross-sectional imaging, 78–79
- ¹⁸F-FDG, 81
- lymphatic and visceral metastases, 80
- metastatic disease detection, 79
- preoperative imaging, 79
- T2-T3N0M0 urothelial carcinoma, 79
- UCB, 80
- USPIO nanoparticles, 78

Lymphovascular invasion (LVI), 115

Lynch syndrome, 19, 23, 26, 46

M

Magnetic resonance imaging (MRI)

- chemotherapy, 450–451
- conventional MRI, 74
- diffusion-weighted MRI (DW MRI), 74–75
- dynamic contrast-enhanced MRI (DCE MRI), 75–76
- lymph node(s), 450
- lymphography (*see* Lymphography)
- muscle invasive bladder cancer, 67
- neoadjuvant chemotherapy, 64–65
- NMIBC
 - detrusor layer, 63–64
 - time-consuming and costly, 63
 - T2 MRI, 64
 - urinary bladder, NMIBC, 63
- staging, 60, 65
- urothelial carcinoma of bladder (UCB), 73–76

Male cystectomy

- accessing Denonvillier's fascia and blunt dissection, 297–298
- endopelvic fascia incision, 298–299
- “Marionette technique”, 353–354

Metabolic acidosis, 303, 333, 340–341, 436

- Metastatic disease
 first-line chemotherapy, 392–394
 second-line chemotherapy, 394–395
- Metastatic surveillance
 distant sites, recurrence, 430
 factors, 431
 guidelines, 430–431
 non-urothelial recurrences, 430
 pathologic tumor stage and lymph node status, 432
 PFS and B-CS, 430
- MIBC. *See* Muscle invasive bladder cancer (MIBC)
- Mitomycin C (MMC)
 adjuvant therapy, 226
 apaziquone, 229
 chemoradiation, 460
 costs, 250
 cystitis, 249
 cytotoxicity, 252
 DNA synthesis, 249
 doxorubicin, 204
 EMDA, 227
 gemcitabine, intravesical, 251
 high-grade Ta tumors, 282
 intravesical chemotherapy, 226
 judicious use, 90
 lower urinary tract symptoms, 281–282
 meta-analysis, 249
 optimization strategy, 227
 recurrence and progression rates, 227
 short-term BCG, 249
 tumor progression rates, 249
- MMC. *See* Mitomycin C (MMC)
- Model
 Cox regression, 116
 neurofuzzymodel (NFM), 128
 predictive, 112, 117
 scoring, 116
 standard pathologic grouping, 128
- Molecular carcinogenesis
 CDKN2A, 52
 chromosome 9, 48, 50
 CIS pathway and muscle invasive disease, 52
 FGFR-3, 50–51
 genetic alterations, Ta and MIBC tumors, 48, 50
 PI3K pathway, 51–52
 PTEN, 53
 RAS, 51
 RB, 53
 Ta pathway, 48
 TP53, 53
 urothelial cell tumorigenesis, 48–49
- Mortality
 age, 5
 cigarette smoking, 4–5
 due to chronic infection, 8
 genetic susceptibilities, 3
 geographic distribution, 3–4
 occupational risk factors, 5
 pioglitazone, anti-diabetic drug, 9
 race, 8
 sex, 5–8
 therapeutic radiation to pelvis, 8
- Multimodality bladder preservation therapy, 460
- Multimodality treatment. *See* Trimodality approach
- Muscle invasive bladder cancer (MIBC)
 AC, 459
 bladder preservation, 459–461
 bone scans, 68
 chemoradiation, 396–397
 clinical practice guidelines, 457
 CT (*see* Computed tomography (CT))
 cystectomy, 458
 detrusor muscle invasion, 11
 histologic variants, 459
 in LND, 411–412
 long-term follow-up, 461
 lymphovascular invasion (LVI), 13
 metastatic disease, 387
 NAC, 458
 nodal metastases, 13
 node-positive M0/MX, 12
 PET, 66, 68–69
 PS and non-obstructive renal impairment, 407
 radiography and ultrasound, 66
 RC and lymphadenectomy, 457–458
 standard vs. extended pelvic lymphadenectomy, 13
 systemic platinum-based combination chemotherapy, 11–12
 treatment strategies, 457
- N**
- NACT. *See* Neoadjuvant chemotherapy (NAC)
- Narrow-band imaging (NBI)
 abnormal lesions and normal urothelium, 163
 false-detection rates, 165
 urothelial carcinomas hypervascularity, 163
 and WL images, 163–164
- Nasogastric tube (NGT) decompression, 350
- National Comprehensive Cancer Network (NCCN), 279, 281–282, 284–287
- Natural history, bladder cancer
 description, 9
 high-grade non-muscle-invasive, 10–11
 low-grade non-muscle-invasive, 9–10
 muscle-invasive, 11–13
 non-urothelial cancers and unusual variants, 9
- NCT. *See* Neoadjuvant chemotherapy (NAC)
- Neoadjuvant chemotherapy (NAC)
 aggressive multiple drug regimens, 389
 cisplatin-based, 389
 clinical and pathologic staging, 328–329, 389
 clinical decisions, 328
 CT/MRI, 64, 407–408
 diffusion-weighted MRI, 65
 dose-dense MVAC with G-CSF support, 389
 and DWI, 65
 FDG PET/CT, 65
 follow-up schedule, 444–446
 gemcitabine and cisplatin (GC), 406

- MVAC therapy, 388–389
- and NNT, 328
- Nordic Cystectomy Trial, 388
- nutritional status, 407
- patient factors, 406
- perioperative chemotherapy, 329
- persistent lymph node involvement, 409
- and PET techniques, 65
- phase III trials, UC, 390
- prospective randomized trial evidence, 441
- radical cystectomy, 64
- radiographic imaging, 64
- vs. RC, 405
- renal function/performance status, 441
- renal impairment, 406
- residual disease, 444
- surveillance, 408–409
- T3/T4 disease, 64
- urologic oncologists, 329
- urologists, 441
- Neobladder
 - Hautmann, 345–346
 - open radical cystectomy, 301–302
 - orthotopic, 347–348
 - QLQ-C30 questionnaire, 349
 - Studer, 346–347
 - urethral anastomosis, 353
- Nerve sparing
 - cystectomy, 330
 - neurovascular bundles, preservation, 316–317
 - radical cystectomy (RC), 330–331, 390
 - sexual function, 349
- NGT. *See* Nasogastric tube (NGT) decompression
- NMIBC. *See* Non-muscle invasive bladder cancer (NMIBC)
- NMP-22. *See* Nuclear matrix protein-22 (NMP-22)
- Nodal metastases
 - clinical presentation, 452
 - combined modality therapy, 452
 - experimental and descriptive techniques, 411
 - muscle-invasive bladder cancer, 411–412
 - patients outcomes, 453
 - patients with positive, distribution, 413
 - pelvic lymphadenectomy, levels, 412
 - persistent evidence, 454
 - quality, 415–416
 - sentinel lymph node identification, 413–414
 - SPECT-CT technique, 414
- Nomogram
 - lymph node metastasis, 118
 - novel biomarkers, 131–132
 - postoperative prediction tools, 128
 - pre-cystectomy, 118
 - predictive tools, 112
- Non-invasive urothelial neoplasms, 34–36
- Non-muscle invasive bladder cancer (NMIBC)
 - age, 112
 - BCG-refractory, 211
 - BCG therapy, 196
 - carcinoma in-situ (CIS), 115
 - and CEUS, 61
 - computed tomography and urography, 61–63
 - confidence profile method, 278
 - contrast-enhanced 3D ultrasound, 61–62
 - cystectomy, 255–256
 - delay of radical cystectomy, 115
 - diagnostic accuracy, 61
 - disease recurrence and progression, 115–116
 - Doppler studies, 60
 - follow-up surveillance, 185
 - gender, 113
 - guidelines, description, 277–278
 - healthcare system, 209
 - high-grade Ta tumor (*see* High-grade Ta tumors)
 - high-risk population, 184
 - intravenous pyelogram, 60
 - intravesical gemcitabine, 250
 - magnetic resonance imaging, 63–64
 - MIBC, 54
 - obesity, 113–114
 - panels' categorization, recommendations, 278–279
 - papillary lesions, 62
 - pathologic factors
 - CIS, 115
 - histologic variants, 115
 - LVI, 115
 - prior recurrences, 114
 - tumor grade, 114–115
 - tumor size and multifocality, 114
 - tumor stage, 114
 - postoperative MMC, 226
 - predictive models, bladder cancer, 116–117
 - primary, 192
 - prophylaxis, 230
 - and PUNLMP, 45
 - race, 112–113
 - radical cystectomy, 116, 118, 253
 - radiography, intravenous pyelography, and ultrasound, 60–61
 - randomized trial, 249
 - recurrence and progression, 115–116
 - scoring system, 280
 - smoking exposure, 114
 - soft tissue contrast, 60
 - surgical factors, 115
 - tumor staging and grading, 192
 - TUR, 195
 - ultrasonography, 60
 - upper urinary tract, 192
 - urinary markers, 187, 195
 - uro-pathologists, 217
- Non-neoplastic urothelium
 - benign proliferative and metaplastic processes, 31–32
 - chemotherapy and Bacillus Calmette–Guérin (BCG), 32
 - hematoxylin and eosin stain (H&E), 31–32
 - non-keratinizing squamous metaplasia, 32–33
 - pseudocarcinomatous hyperplasia, 32–33
 - reactive nuclear atypia, 32–33
 - von Brunn nests (VB), 32–33

Non-occupational high-risk populations

- AAN, 24, 26
- bladder cancer, workers, 24–25
- definitions, 23–24
- heavy smokers and occupational exposed people, 24
- risk identification, 23

Non-urothelial bladder cancer

- adenocarcinoma with colonic-type gland formation, 37–38
- description, 37
- small cell carcinoma, 38
- squamous cell carcinoma, 37–38

Nuclear matrix protein-22 (NMP-22), 19–20, 156

O

“Oncogene addiction”, 147

Open radical cystectomy

- description, 293
- female (*see* Female cystectomy)
- long term, 304
- lymph node dissection, 300
- male, 297–298
- mesenteric window creation, left ureter, 297
- postoperative management, 302–303
- pouch-vaginal fistula, 304
- preoperative
 - neoadjuvant treatment, 294
 - staging, 293–294
 - surgery preparation, 295–296
 - type of diversion, 295

RARC, 293

reverse Trendelenburg positioning, 296

short term, 303–304

TCC/CIS, 297

urachus dissection, 296

urethral recurrence, 304–305

Open techniques, urinary diversion

- bowel anastomosis, 351
- ureterointestinal anastomoses, 351–352

Optical coherence tomography (OCT)

- CIS, 163
- computer-aided texture analysis, 162
- high-resolution imaging technology, 162
- malignant characteristics, 162–163
- surface structure, 162

Optimization

- and education, 238–239
- high-dose vitamin supplements, 232
- immunosuppressed patients, 233
- induction, concurrent, and adjuvant chemotherapy, 368–372
- muscle-invasive bladder cancer, 89
- PPD, 232
- predictive and prognostic factors, 372
- radiation fractionation regimens and doses, 363–368
- recurrence and progression rates, 233
- TCT technology, 227

Organ preservation, 361–362

Outcome

- anatomical staging systems, 111
- cancer-specific, stratification, 121
- lymph node involvement, 122
- oncologic, 113
- p21 expression, 127
- p53 nuclear accumulation, 123
- prediction tools, 112
- at radical cystectomy, 116, 118
- smoking exposure, 114
- UCB, 114, 133

P

Papillary lesions

- LGTCC and HGTCC, 34–35
- PUNLUMP with marked thickness, 34–35
- urothelial papilloma, 34–35
- 2004 WHO/ISUP classification scheme, 34

Pathologic complete response

- in vivo* chemotherapy sensitivity, 387
- pCR marker, improved survival, 388

Pathology, NAC, 443

PDD. *See* Photodynamic diagnosis (PDD)

Pelvic lymphadenectomy. *See also* Lymph node dissection (LND)

- lymphadenectomy, 300
- muscle-invasive bladder cancer, 293
- urinary diversion, 301–302

Pelvic lymph node dissection (PLND), 128, 131, 311, 321, 340–341

Perioperative chemotherapy

- follow-up schedule, 444–446
- metastatic disease, 394
- NAC, 443
- phase I/II chemoradiation trials, 396
- prognosis, 441–443

Phosphatidylinositol 3-kinase (PI3K) pathway, 51–52

Photodynamic diagnosis (PDD)

- ALA, 159–160
- and autofluorescence (AF), 160
- CIS lesions, 160
- cost-effectiveness, 161
- false positives, 160
- fluorescence cystoscopy, 159–162
- hypericin, 162
- intravesical instillation, 193
- intravesical instillation, fluorophore, 159
- meta-analysis pool, 240
- non-invasive bladder tumors, 268
- novel fluorophores, 162
- papillary bladder tumor, WL, 160
- photobleaching, 160
- random bladder mapping, 241
- recurrence probability, 160–161
- suspicious bladder tumors, 165
- WLC, 194

PLND. *See* Pelvic lymph node dissection (PLND)

Port placement, 212, 311, 352

Positive lymph nodes
 description, 423
 lymphadenectomy extent, 424–425
 preoperative imaging, 424
 radical cystectomy (RC), 423–425

Positron emission tomography (PET)
 false-positive evaluation, 69
 hypermetabolic pre-sacral lymph node, 69
 PET/CT, 68–69
 radio-isotopes, 68
 UCB imaging (*see* Urothelial carcinoma of bladder (UCB))

Postoperative care, RC, 333

Pouch-vaginal fistula, 304

Practice guidelines. *See* High-grade Ta tumors

Preoperative imaging, 424

Prognosis, 13, 55, 441–443

Prognostication and risk assessment
 description, 111
 metastatic and recurrent bladder cancer, 132–134
 MIBC, 118–132
 NMIBC, 112–118
 prediction tools, 112

Prognostic, Bacillus Calmette–Guerin (BCG)
 CUETO, 254
 MIBC, 253
 recurrence and progression scores, 253–254
 T1 NMIBC, 254–255
 total score, 253–254

Prostate sparing RC (PSRC), 330

PSRC. *See* Prostate sparing RC (PSRC)

pTa G3, 191, 195

Q

Quality-adjusted life years (QALYs), 97–98

Quality improvement
 CMS, 91
 incidence and mortality, 91–92
 Leapfrog Group, 91
 MMC data, 90
 natural regionalization, 90
 NCCN guidelines, 92
 post-TURBT MMC, 90
 PQRS, 91
 regionalization models, 91
 USQC, 90

Quality of care
 BCG, 89–90
 cisplatin-based regimens, 88–89
 comorbid conditions, 89
 health care, 88
 NCCN guidelines, 89
 NMIBC patients, 89
 physicians, 88
 radical cystectomy, 88
 surgical factors, 89

Quality of life (QOL)
 health-related assessment, 305

HRQOL (*see* Health related quality of life (HRQOL))
 and morbidity, 18

R

Radiation. *See* Bladder preservation therapy

Radical cystectomy (RC)
 African Americans, 87
 ANN, 128
 BCG-refractory disease, 253
 bladder cancer, 87
 bladder preservation (*see* Bladder preservation therapy)
 capsule/prostate sparing, 330
 description, 379
 Dutch population-based study, 327
 with erectile function preservation, 330–332
 female patient, 334–335
 individual risk assessment, 327–328
 intravesical therapy, 212
 LND (*see* Lymph node dissection (LND))
 localized muscle invasive bladder cancer, 379
 local tumor control, 425
 long-term complication rate, 333
 low-grade disease, 211
 lymphadenectomy, 11, 78
 lymph node template (level I–III), 423–424
 metastases, 11–12, 211
 MIBC, 457
 morbidity and mortality rates, 332–333
 muscle-invasive disease, 12, 429
 vs. neoadjuvant chemotherapy (NAC), 67, 405
 node-positive disease, 115
 nomograms, 128, 327
 nutritional deficiency, 407
 organ-confined disease, 128
 pathologic features and outcome, 116–118
 patient work-up, 379–380
 pelvic lymphadenectomy, 300
 and pelvic lymph node, 12, 81
 PLND, 340–341
 postoperative care, 333, 425
 probability, pT-stage, 423–424
 prognostic factors, 380
 recurrent tumor, 255
 robot-assisted
 complications, 337–338
 meticulous surgical technique during ureteral dissection, 353
 modified lithotomy position with steep Trendelenberg, 352–353
 vs. open surgical approach, 335
 preoperative, intraoperative and postoperative factors, 338
 stage II bladder cancer, 88
 surgical quality, 329
 surveillance, 408–409 (*see also* Metastatic surveillance)
 transurethral resection, 73, 77

- Radical cystectomy (RC) (*cont.*)
 urethrectomy (*see* Urethrectomy)
 urinary diversion, 88, 90, 303, 332, 408, 425
 UUT (*see* Upper urinary tract (UUT))
- Radiology, 432
- Radiotherapy
 image-guided adaptive, 367–368
 molecular markers, 370–371
 synchronous chemotherapy, 368
 tumor hypoxia modification, 369
- Random biopsies, 186, 202, 204–205, 216, 241, 380, 385
- RARC. *See* Robot-assisted radical cystectomies (RARC)
- RC. *See* Radical cystectomy (RC)
- Recurrence
 BCG, 89, 246
 bladder cancer, 156
 cancer-specific mortality, 127
 EORTC, 257
 FISH, 241
 gemcitabine, 251
 hematuria, 39
 high-grade Ta tumors, 204
 low-grade and high-grade bladder cancers, 55
 mitomycin C, 210
 multivariate analysis, 182
 Nerve-sparing techniques, 349
 NMIBC, 249
 perioperative dose/maintenance therapy, 227
 prognosis, 55
 progression rates, 10
 radical cystectomy (RC), 133, 245
 renal ultrasound and labs, 445
 smoking status and cumulative exposure, 114
 systemic chemotherapy, 12
 tuberculosis, 272
 upper urinary tract, 192
 UUT, 432
- Re-resection, 74, 191, 193–194, 201–202, 219, 280–281
- Re-transurethral resections of bladder tumors
 (Re-TURBT), 218–219
- Review pathology, 217, 219
- Right PLND
 iliac lymph node dissection, 313–314
 obturator and hypogastric lymph node dissection,
 313, 315
 “split-and-roll” technique, 312
- Risk factors
 age and male gender, 18, 23
 to carcinogen exposure, 19
 non-genetic, acquired, 23
 predisposing syndromes, 19
- Risk group, 184, 226, 257–259
- Risk stratification. *See* Prognostication and risk assessment
- Robot-assisted radical cystectomies (RARC)
 anesthesia and patient positioning, 310
 bladder mobilization and apical dissection, 317
 bladder pedicle
 after thorough rectum mobilization, 323
 with endovascular stapler, 323
 with Hem-o-lok clip, 323
 description, 309
 distal ileum and tags preparation, 315
 extracorporeal urinary diversion, 318–319
 female vs. male patient, 311
 indications, 309–310
 left colon and sigmoid colon, 313–314
 left PNLD, 314
 left ureter under sigmoid mesentery, 314
 neurovascular bundles, preservation, 316–317
 operating room equipment and personnel
 positioning, 310
 paravesical space and ureter development, 312–313
 pathologic and oncologic outcomes, 321
 perioperative complications, 320–321
 port placement and instruments, 311–312
 postoperative care, 319–321
 prerectal and posterior vesical space, 315–316
 remaining inferior vesical vessels, 316
 right PLND, 312–315
 specimen extraction, 318
 superior vesical arteries, 315
 techniques, 311
 urethral dissection, ligation and division,
 314, 317–318
- Robotic surgery. *See* Radical cystectomy (RC)
- S**
- Screening
 cost and cost-effectiveness, 26–27
 description, 17
 general population, 20–23
 lead-and length-time bias, 18
 lifetime probability, 17
 lower incidence and mortality, 18
 The National Cancer Institute, 18
 non-occupational high-risk populations, 23–26
 patients with Lynch syndrome, 26
 population-based, 18
 potential issues, 18
 risk factors, 18–19
 urine markers (*see* Urine markers)
- Second-line chemotherapy
 multiple single agents, 394
 multivariate cox analysis, 395
 pemetrexed, multitargeted antifolate agent,
 394–395
 re-administration, first-line, 395
 single-agent phase II trials, 394
- Sepsis
 BCG instillation, 274
 steroids administration, 274
- Short term complications
 mucus plugging, 304
 patients with orthotopic neobladders, 303
 symptoms, 303
- Side effects
 anthracyclines, 228
 anti-tuberculous therapy, 231
 BCG therapy, 230

- contact dermatitis, 249
- interferon, 246
- intravesical gemcitabine, 250
- isoniazid prophylaxis, 273
- jejunum, 340
- local and systemic, 246
- optic neuritis, 274
- perforation, 225
- valrubicin, 248
- Sigmoid pouch, 347
- The Spanish Oncology Genitourinary Group (SOGUG), 391, 443
- Staging
 - bladder cancer, 38–39
 - CT and MRI, 60
 - diagnostic accuracy, 65
 - limitations, 39
 - morphologic variations, 39
 - muscle-invasive bladder, 12
 - nodal, 414–415
 - pT1, pT2 and pT3 diseases, 38–39
 - treatment failure, 12
 - T1/T2-MRI, 65
 - UCB (*see* Urothelial carcinoma of bladder (UCB))
 - ultrasonography, 60
 - upper urothelial tracts, 59
 - urothelial carcinoma, 66
- Studer orthotopic neobladder, 346–347
- Surgical therapy
 - and anatomy, 296–297
 - and surveillance
 - antibiotic prophylaxis, 180
 - cold-cup biopsy, 183
 - fulguration, 183
 - imaging, 179, 187
 - medical clearance, 180
 - resection, 182
 - TURBT (*see* Transurethral resection of bladder tumors (TURBT))
 - upper tract evaluation, 187
 - urinary markers, 187
 - during ureteral dissection, 353
 - ureterointestinal anastomoses, 351–352
- Surveillance
 - ICUD guidelines, 461
 - metastatic surveillance, 430–432
 - MIBC, 435
 - radical TUR alone, 460
 - and surgical therapy (*see* Surgical therapy)
 - urethrectomy, 433–435
 - urinary diversion, 435–437
 - UUT, 432–433
- Survival
 - after radical cystectomy, 128–132
 - cost, 95–96
 - gender, 119
 - lymph node, 120, 122
 - race, 112
- T**
 - Ta pathway, 48, 50–54
 - Targeted therapy, 128, 145, 234
 - Thermochemotherapy (TC), 227, 252, 268
 - Thiotepa, 209–210, 225, 227
 - TNM staging system, bladder cancer, 414–415
 - Transitional cell carcinoma (TCC)
 - carcinoma in situ (CIS), 257
 - localized/metastatic, 80
 - radical cystectomy, 361
 - standard of care, 361
 - tumor cell repopulation, 367
 - Transurethral resection of bladder tumors (TURBT)
 - bladder cancer management, 180
 - concurrent systemic treatment, 381
 - general/regional anesthesia, 180
 - intensity modulated radiation therapy, 383
 - joint replacement/spinal abnormality, 180
 - papillary TCC, resectoscope, 181
 - prognostic factors, 380
 - treatment planning CT, 383
 - Treatment outcome, 98, 112, 216, 457
 - Trimodality approach
 - adjuvant chemotherapy, 369
 - concurrent chemotherapy, 368
 - induction chemotherapy, 368–369
 - inhibition, EGF receptor activity, 372
 - patient selection, 370–372
 - radiation fractionation regimens and doses, 363, 367–368
 - tumor hypoxia modification, 369
 - Tumor burden, 156, 201, 405, 432
 - TURBT. *See* Transurethral resection of bladder tumors (TURBT)
- U**
 - Upper urinary tract (UUT)
 - cytology, 432
 - description, 432
 - guideline recommendations, 433
 - MR urography, 432
 - recurrences, 433
 - risk factors identification, 432
 - Urethral recurrence. *See also* Urethrectomy
 - neuroanatomical studies, 305
 - prostatic involvement and continent cutaneous diversion, 304
 - radical cystectomy (RC), 434
 - risk, 300, 435
 - Urethrectomy
 - in female patients, 433
 - guideline recommendations, 434–435
 - incidence, subsequent urethral recurrence, 434
 - neobladder reconstruction, 295
 - urethral wash cytology, 434
 - Urinary bladder cancer (UBC)
 - description, 387
 - NCT vs. ACT, 387–388

- Urinary bladder cancer (UBC) (*cont.*)
 postbiopsy effects, 75
 test, 22
- Urinary bladder neoplasms, 201, 204
- Urinary cytology
 asymptomatic microhematuria, 173
 chromosomal abnormalities, 174
 classification, 173
 FISH, 174
 focal pseudo-degenerated atypia, 173
 human polyoma virus infection, 176
 inflammatory conditions, 176
 malignant lesions, 176
 reactive urothelium, 176
 seminal vesicle cells, 176
 UroVysion™, 174–175
- Urinary diversion
 closure, 302
 comparison, 348
 continence, 348–349
 continent orthotopic, 348
 contraindications, 347
 cutaneous reservoir, continent, 302
 frozen-section analysis, 347
 ileal conduit, 301
 muscle-invasive bladder cancer, 88
 muscle-invasive urothelial bladder cancer, 337
 neobladder, 301–302
 open techniques, 351–352
 perioperative
 anesthetic considerations, 350
 NGT decompression, 350
 nutrition, 350–351
 postoperative strategies, 350
 physiologic voiding, 98
 and PLND, 340
 preoperative
 bowel preparation, 339
 bowel segment selection (*see* Bowel segment selection)
 parenteral antibiotics, 339
 patient optimization and education, 338–339
 VTE, 339–340
 proper selection and planning, 347
 quality of life (QOL), 349
 radical cystectomy (RC), 90, 104, 340
 sexual function, 349–350
 specimens, 174
 surveillance, 435–437
 types
 colon conduit, 342
 continent cutaneous urinary diversions, 343
 Hautmann neobladder and chimney modification, 345–346
 ileal conduit, 341–342
 Indiana Pouch, 343–344
 Koch Pouch, 343–344
 non-continent cutaneous diversions, 341
 orthotopic continent diversions, 344–345
 sigmoid pouch, 347
 Studer orthotopic neobladder, 346–347
- Urine markers
 and BCG
 FISH, 195
ImmunoCyt (Scimedx Corp.), 194–195
Nuclear Matrix Protein 22 tests, 194
 Urovysionr FISH, 195
 BladderChek NMP-22 test, 19–20
 BTA-Stat and BTA-Trak, 20
 cytology, 19
 description, 19
 dipstick hematuria testing, 19
 FISH, 20
 ImmunoCyt Test, 20
- Urothelial carcinoma. *See also* Urothelial carcinoma of bladder (UCB)
 adenocarcinoma/squamous cell carcinoma, 41–42
 bladder cancer, 8
 cytology, 41
 diagnosis, 66
 distant metastasis, 68
 field-change disease, 432
 gene expression profiling, 37
 high-grade urothelial tumors, 41–42
 high-resolution images, 66
 invasive, 36–37, 76–77
 low-grade papillary, 41
 metastasis, 68
 molecular level, 48
 and morphologic variants, 31
 neoadjuvant chemotherapy (NAC), 69
 non-muscle-invasive, 194
 phase II trials, 150
 plain radiography and ultrasound, 66
 radical cystectomy, 211
 renal neoplasm, 172
 soft tissue, 67
 squamous/ adenocarcinomatous elements, 459
 staging, 67
 Trebananib, 151
 types, 8
 upper tract tumors, 158
 urothelium, 156
 variants, 37
- Urothelial carcinoma of bladder (UCB)
 CT and MRI, 73
 extravesical disease, 119
 gender, 113
 hormonal differences, 119
 local disease assessment
 conventional MRI, 74
 DCE MRI, 75–76
 and DW MRI, 74–75
 PET/CT, 76–77
 metastatic disease assessment, 77–78
 molecular abnormalities, 127
 MRI lymphography (*see* Lymphography)
 predictive tools, 112
 radical cystectomy, 73
 smoking exposure, 114
 specific mortality, 119

tumor/micrometastatic disease, 73
variant histology, 123
UroVysion[®] assay, 43, 158
UUT. *See* Upper urinary tract (UUT)

V

Venous thromboembolism (VTE) prophylaxis, 339–340
Virtual cystoscopy (VC)
diagnostic imaging modalities, 159
3-D volume-rendered reconstructions, 165

Vitamin B12 metabolism
ileal conduit, 437
urinary diversion, 436
VTE. *See* Venous thromboembolism (VTE)
prophylaxis

W

White light cystoscopy (WLC), 22, 155,
158, 194, 268