Kent and Medway Cancer Collaborative

Oncological Treatment of Urological Cancer

Pathway of Care

Core Network Team

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1.0 Overview

This document has been written to provide guidance on the treatment of Urological cancer in the Kent & Medway Cancer Collaborative.

Radiotherapy schedules are as defined in the Kent Oncology Centre Quality System Clinical Protocols.

All patients will be considered for entry into a clinical trial (see appendix A).

See network chemotherapy prescribing proformas for details of chemotherapy / anti-cancer regimens. In urology, all chemotherapy protocols with the exception of those used for germ cell tumours will be capped at a body surface area of 2.0 (unless otherwise specified on proforma). See Note on capping under section 3.0.

All patients should be discussed within a multidisciplinary team meeting before commencing initial treatment.

Please note some of the drugs/doses recommended within this document are outside of the U.K. licensed marketing authorisation.

Erythropoiesis stimulating agents may be used as an option for treating anaemia in patients having chemotherapy.

2.0 Prostate

2.1 Hormone sensitive prostate cancer

Hormone therapy may be prescribed as neo-adjuvant treatment prior to radical radiotherapy, as adjuvant treatment after radical radiotherapy for high risk disease and as primary treatment of locally advanced or metastatic disease. An LHRH analogue or anti-androgen may be prescribed for non-metastatic disease. An LHRH analogue is the drug of choice for metastatic disease.

Treatment of Hot Flushes:

- Offer medroxyprogesterone (20 mg per day), initially for 10 weeks, to manage troublesome hot flushes caused by long-term androgen suppression and evaluate the effect at the end of the treatment period.

- Consider cyproterone acetate or megestrol acetate (20 mg twice a day for 4 weeks) to treat troublesome hot flushes if medroxyprogesterone is not effective or not tolerated.

- Tell men that there is no good-quality evidence for the use of complementary therapies to treat troublesome hot flushes

2.1.1 Neo adjuvant

Given for 12 weeks pre-radiotherapy and for duration of radiotherapy: LHRH analogue (with anti-androgen for first 4 weeks to inhibit tumour flare) or Bicalutamide 150 mg daily with concurrent Tamoxifen 20 mg weekly to prevent gynaecomastia.

2.1.2 Adjuvant

Adjuvant hormone therapy may be considered for high risk localised disease for 2-3 years post radiotherapy:

- LHRH analogue or Bicalutamide 150 mgs + concurrent Tamoxifen 20 mgs each week to prevent gynaecomastia + anti-androgen for 4 weeks with first LHRH dose to inhibit tumour flare.
- Bisphosphonates should be offered to men receiving androgen deprivation therapy who have osteoporosis.
- In high risk cases, LHRH analogue and 6 cycles of Docetaxel could be considered. Funding approval required.

2.1.3 PSA progression post radiotherapy in absence of distant metastasis

Whilst hormone therapy can be very effective in reducing PSA, there is no evidence that early treatment improves survival and there is no consensus view on the timing of initiation of this treatment. The decision to start therapy will be an individual by individual decision based on patient preference, histology, PSA level and kinetics.
LHRH analogue or Bicalutamide/Tamoxifen combination may be used. Some patients may be offered intermittent therapy as per NICE guidance; consider reintroducing androgen suppression if PSA >10 nanogram/ml. Maximum androgen blockade can be offered if there is further rise in PSA (LHRH analogue + Bicalutamide 50mg)

2.1.4 First line metastatic

- LHRH analogue or orchidectomy.
- Degarelix can be considered for advanced hormone dependent prostate cancer in patients with spinal metastases.(NICE TA 404 – Funding within tariff)

Docetaxel should be used to treat hormone naïve metastatic prostate cancer, as follows, in:

- Men either commencing or who have commenced within 12 weeks, long-term ADT for metastatic disease for the first time; and
- Men of sufficient performance status to be treated with 6 cycles of docetaxel chemotherapy.
- Abiraterone for metastatic (until disease progression) and locally advanced disease (for two years) Funding approval required.
- Enzalutamide. Funding approval required.

2.1.5 Second line metastatic

- Maximum Androgen Blockade - LHRH analogue/orchidectomy + Bicalutamide 50mg

2.1.6 Third line metastatic

- Anti-androgen withdrawal
- Dexamethasone 0.5mg od

2.1.7 Fourth line metastatic

- Diethylstilbestrol 1-3 mgs + low dose aspirin and/or Dexamethasone 0.5-2 mgs daily or Prednisolone 5-10 mgs daily (proton pump inhibitor may be considered for those patients on both a steroid and aspirin)

- Tamoxifen 20 mg once a week or breast bud irradiation can be offered in the metastatic setting to prevent or treat gynaecomastia.

2.1.8 First line non-metastatic

- LHRH analogue or Bicalutamide 150 mgs + concurrent Tamoxifen 20 mgs each week to prevent gynaecomastia + anti-androgen for 4 weeks with first LHRH dose to inhibit tumour flare.

2.1.9 Second line non-metastatic

- Maximum androgen blockade LHRH + Bicalutamide 50 mgs

2.2 Castration resistant prostate cancer

2.2.1 M0

- Consider the use of Apalutamide, enzalutamide and darolutamide funding approval required.

2.2.2 M1

2.2.2.1 First line Systemic Anti-Cancer Therapy (SACT)

Patients with performance status 0-1:

Docetaxel + Prednisolone for up to 10 cycles in accordance with NICE guidance

- *It should be given only if the man is well enough to care for himself with occasional assistance.*
- *Treatment should be stopped at the end of a planned course of up to 10 cycles (or 'rounds') of docetaxel.*
- *The treatment should be stopped early if the man experiences serious side effects, or if the disease is getting worse.*

NICE does not recommend using docetaxel again if the disease comes back after the first course of treatment has finished.

- Chemotherapy naïve patients with metastatic, castration resistant prostate cancer who are asymptomatic or mildly symptomatic should be considered for Abiraterone with prednisolone (NICE TA 387) or enzalutamide (NICE TA 377 – commissioned by NHSE from 26th April 2016). Patients who are unfit or unable to tolerate docetaxel chemotherapy may also be considered for Abiraterone with prednisolone or enzalutamide.

- If either abiraterone or enzalutamide has to be stopped within 3 months of its start solely as a consequence of dose limiting toxicity and in the clear absence of disease progression, the alternative agent may be commenced.

Patients with performance status 2 or myelosuppression:

Mitoxantrone + Prednisolone until disease progression

2.2.2.2 Second line Systemic Anti-Cancer Therapy (SACT)

Patients with performance status 0-1:

- Abiraterone + Prednisolone on disease progression on or after previous treatment with one docetaxel containing regimen (NICE TA 259)
- Mitoxantrone + Prednisolone until disease progression (N.B. maximum cumulative dose Mitoxantrone 140mg/m^2)
- Re-challenge with docetaxel if greater than or equal to 6 months after completing first line chemotherapy with docetaxel and had previous good response (algorithm deviation request required).
- Cabazitaxel + Prednisolone after the patient has had 225 mg/m^2 or more of docetaxel. Treatment with cabazitaxel must be stopped on disease progression or after a maximum of 10 cycles (whichever happens first). (NICE TA 391)
- Enzalutamide may be considered on disease progression on or after previous treatment with a docetaxel containing regimen and no previous treatment with abiraterone.

NB

1. Abiraterone may be considered where enzalutamide as second line therapy has had to be stopped within 3 months of its start solely as a consequence of dose limiting toxicity and in the clear absence of disease progression.
2. Enzalutamide may be considered where abiraterone as second line therapy has had to be stopped within 3 months of its start solely as a consequence of dose limiting toxicity and in the clear absence of disease progression.

2.2.2.3 Third line Systemic Anti-Cancer Therapy (SACT)

- Cabazitaxel + prednisolone (funding approval required) after previous treatment with docetaxel and abiraterone or enzalutamide based treatment
- Abiraterone + Prednisolone or enzalutamide after previous treatment with docetaxel and cabazitaxel in the second line setting

2.2.2.4 Other treatment options (off protocol)

- Ketoconazole
- Estramustine
- Oral cyclophosphamide

2.3 Small Cell Prostate Cancer

- Carboplatin + Etoposide x 4-6 cycles

2.4 Management of bone pain

External beam radiotherapy may be considered for the palliation of bone pain.

Zoledronic acid is indicated for the prevention of skeletal related events in patients with advanced disease involving the bone when used as part of a pain management programme for symptomatic bone metastases. A dental examination with appropriate preventative dentistry should be considered prior to Zoledronic acid. Dental procedures should be avoided if possible.

Radium 223 Dichloride may be considered for selected patients with no visceral metastases.

2.5 Radiotherapy

2.5.1 Management of early prostate cancer

External beam radiotherapy is combined with 3-6 months neo adjuvant androgen deprivation. Brachytherapy (delivered at Maidstone Hospital) is the implantation of radioactive seeds into the prostate. It has the advantage of potentially maintaining erectile function, a shorter treatment time and less damage to normal tissues. It is not suitable for men with a large prostate, significant lower urinary tract symptoms (LUTS) or who have had a transurethral resection of the prostate (TURP) but may be considered as an alternative to external beam radiotherapy.

2.5.2 Management of locally advanced prostate cancer

Radiotherapy combined with hormone therapy should be considered in T3 / T4 node positive disease. Patients with a high >20ng/ml PSA who are staging negative may also be considered for irradiation of the pelvic nodes as well as the prostate.

Salvage external beam radiotherapy with or without adjuvant hormone therapy may be considered for patients with biochemical failure following surgery with curative intent for early prostate cancer.

3.0 Urothelial cancer

3.1 Chemotherapy

3.1.1 Intravesicular chemotherapy

For more detail, refer to the K&MCN document, 'The Management of Bladder Cancer: A Pathway of Care' available on the Network website http://www.KMCC.nhs.uk/.

3.1.2 Neo adjuvant

Indications for neo-adjuvant chemotherapy pre-cystectomy

- Grade 2 or 3 bladder cancer
- Muscle invasive TCC
- PS 0-1
- Renal function as defined by chemotherapy prescription proforma

- Gemcitabine and Cisplatin x 3-4 cycles
- Gemcitabine and split dose Cisplatin x 3-4 cycles
- Gemcitabine and Carboplatin x 3-4 cycles

(Patients with locally advanced disease who are responding to neo adjuvant chemotherapy may receive 3 further cycles in adjuvant setting)

Neo adjuvant chemotherapy has recently been shown in meta-analysis to confer a small but significant survival benefit, and should be offered to high-risk patients.

3.1.3 Adjuvant

Indications for adjuvant chemotherapy post-cystectomy

- Grade 3
- T3
- T4
- Node positive
- Other high risk features

- Gemcitabine and Cisplatin x 4 cycles
- Gemcitabine and split dose Cisplatin x 4 cycles
- Gemcitabine and Carboplatin x 4 cycles

3.1.4 First line metastatic disease

- Gemcitabine and Cisplatin x 6 cycles
- Gemcitabine and Carboplatin x 6 cycles
- Gemcitabine and split dose Cisplatin x 6 cycles
- Paclitaxel and Carboplatin x 6 cycles
- Atezolizumab for patients with transitional cell carcinoma to continue until disease progression.

3.1.5 Second line and beyond metastatic disease

- Pembrolizumab for patients with transitional cell carcinoma treatment for up to 2 years.
- Atezolizumab for patients with transitional cell carcinoma previously treated with platinum-based chemotherapy.
- Gemcitabine and Cisplatin or Carboplatin re-challenge may be appropriate if previous response and adequate progression free disease interval
- MVAC x 6 cycles OR Accelerated MVAC x 6 cycles
- MVACarbo x 6 cycles
- CMV x 6 cycles
- CarboMV x 6 cycles
- Paclitaxel & Carboplatin x 6 cycles
- Weekly Paclitaxel x 6 cycles
- Paclitaxel and Gemcitabine x 6 cycles

3.2 Radiotherapy and Chemoradiation

Radiotherapy or Chemoradiation may be offered as an alternative to cystectomy as an attempt to conserve the bladder.

Radiotherapy may also be used to control haematuria in advanced bladder cancer.

Mitomycin C (day 1) and 5-Fluorouracil (days1-5 of weeks 1 and 4) with radiotherapy or Mitomycin C (day 1) and capecitabine 650mg/m2/day in two divided doses days 1-5 during radiotherapy

N.B. Three cycles of neo-adjuvant chemotherapy should be given prior to chemoradiotherapy in suitable patients.

3.3 Small cell urothelial cancer

- Carboplatin + Etoposide x 4-6 cycles
- Radiotherapy may also be considered

4.0 Testicular cancer

Note: follow South East England Supraregional testicular cancer management protocol under revision.
Note: chemotherapy doses should be capped at a body surface area (BSA) of 2.2 on first cycle.
If patient tolerates first treatment increase to measured BSA at subsequent cycles.

4.1 Neo adjuvant chemotherapy

- Carboplatin AUC7 x1-2 cycles with radiotherapy

4.2 Adjuvant chemotherapy

- BEP 360 x 2 cycles
- Carboplatin AUC7 x 1 cycle

4.3 Radical treatment

- BEP 500 x 3 cycles
- BEP 360 x 4 cycles
- EP 360 x 4 cycles
- EP 500 x 4 cycles

N.B. Carboplatin may be used if patients unsuitable for cisplatin

4.4 Radiotherapy

4.4.1 Seminoma

- Carboplatin + Etoposide x 4-6 cycles

Radiotherapy can be used in the following patient groups:

- Stage I high risk
- Stage IIa and IIb (alone and in combination with Carboplatin)
- Stage IIc, III, IV or extra gonadal primary (may be considered in patients with > 3 cm residual mass following chemotherapy

4.4.2 Non seminoma

Radiotherapy should be used in the following patient groups:

- Stage III-IV poor prognosis with brain metastasis (whole brain radiotherapy 4 weeks after chemotherapy)

5.0 Renal cell cancer

5.1 Neo adjuvant chemotherapy

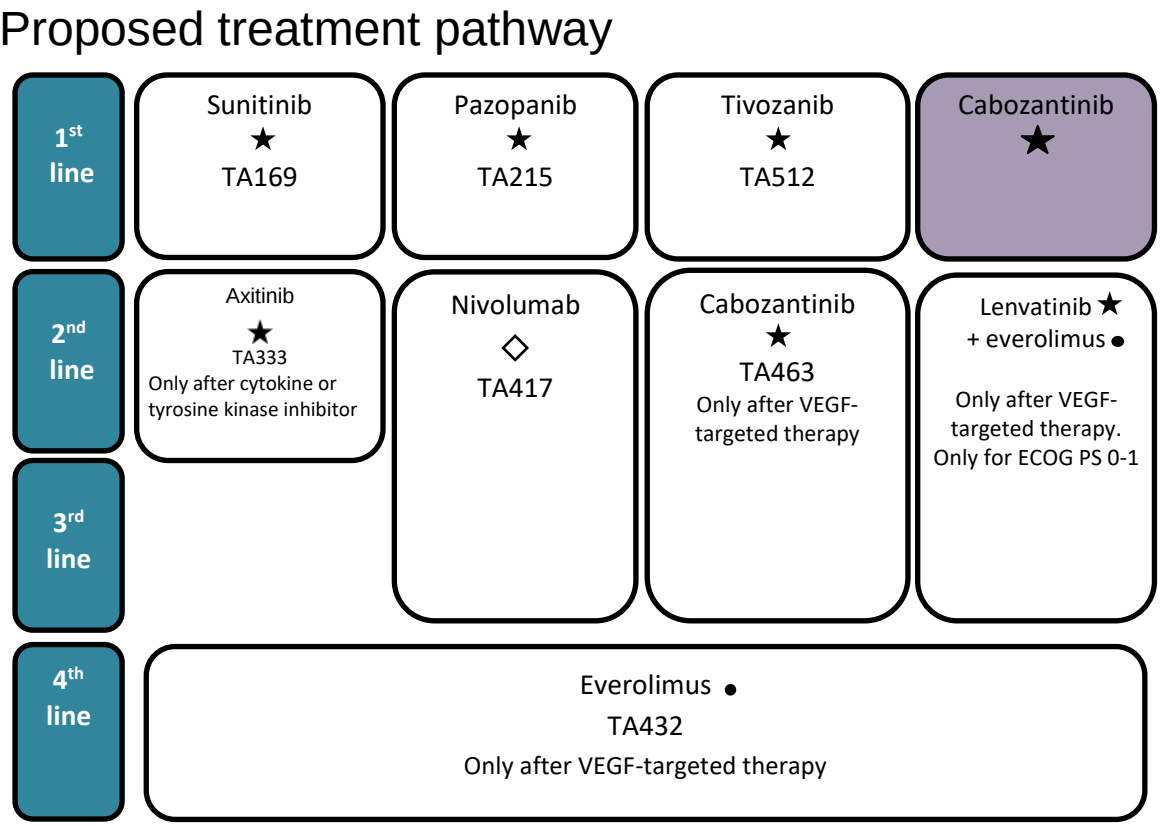
Consider clinical trials

5.2 Adjuvant chemotherapy

Consider clinical trials

5.3 Palliative treatment

Flow chart to show proposed treatment pathway



KEY: ECOG PS, Eastern Cooperative Oncology Group performance status:
VEGF, vascular endothelial grow factor
★ : oral tyrosine kinase inhibitor (TKI);
● : oral mammalian target of rapamycin (mTOR) inhibitor;
◊: anti-programmed death 1 (PD-1) inhibitor

5.3.1 First line treatment

Consider stratifying patients according to Heng criteria in MDM.

Sunitinib, pazopanib or tivozanib (in patients with a clear cell component) in accordance with NICE guidance. N.B. Where a patient is receiving 1st line sunitinib, pazopanib or tivozanib and is intolerant but responding to treatment, switch to an alternate first line TKI.

- Cabozantinib for intermediate or poor risk metastatic or inoperable disease with a clear cell component.

- Zoledronic Acid and denosumab should be considered as treatment options for bone metastasis

Ipilimumab/nivolumab for intermediate/poor risk renal cell cancer with clear cell.

5.3.2 Second or third line treatment

The following drugs may be prescribed in line with the commissioning criteria:

- Lenvatinib with Everolimus (Clear cell component)
- Axitinib
- Nivolumab
- Cabozantinib
- Everolimus

5.4 Radiotherapy

Metastatic renal cell carcinoma may respond to radiotherapy if localised or symptomatic, e.g. bone secondaries.

6.0 Penile cancer

See supranetwork MDM guidance.

Refer to South West London Cancer Network "Guidelines for the referral, investigation, management and follow-up of patients with urological cancers" – Penile Cancer

Cisplatin and capecitabine may be delivered in Kent and Medway under the direction of the South West London MDT.

6.1 Adjuvant chemotherapy

- Adjuvant chemotherapy regimes include Cisplatin and 5FU combination, Carboplatin and Capecitabine in combination.
- Concomitant Chemo-radiotherapy regimes include the use of weekly Cisplatin and a six week course of External beam radiotherapy which may include a 2-phase technique.

Advice should be sought from the Supra-Regional Centre for individual patients if not already given in referral letter from the Centre.

6.2 Palliative treatment

- Palliative radiotherapy regimes include 30Gy in 10# to the primary and /or nodes, 20Gy in 5# to nodes.
- Palliative chemotherapy includes agents listed above.

7.0 Appendix A: Clinical Trials

Refer to the local research team who will provide on request an orientation handbook, list of current trials and associated trial protocols and summaries.

Contact numbers

MTW – Clinical Trials Office	01622 225 033
Darent Valley Hospital – Clinical Trials Office	01322 428 100 ext 4810
Medway Maritime Hospital – Clinical Trials Office	01634 825 094

East Kent Hospitals – Clinical Trials Office:

Solid Tumours (excluding Gynae)	01227 866 393
Gynae Clinical Trials	01843 234 343
Haematology Clinical Trials	01227 864 129

8.0 Personnel and Contact Information

A comprehensive, up to date list of MDM contact details can be found on the KMCC website via the following link: http://www.KMCC.nhs.uk/home-page/for-professionals/

9.0 Glossary

Acronyms in common usage throughout KMCC documentation

CNB	Cancer Network Board
CYP	Children & Young People (in relation to the IOG)
DCCAG	Diagnostic Cross Cutting Advisory Group
DOG	Disease Orientated Group (NSSG/TSSG/TWG)
DVH	Darent Valley Hospital
EK	East Kent
EKHUFT	East Kent Hospitals University Foundation Trust
HoP	High Level Operational Policy
IOSC	Improving Outcomes: A Strategy for Cancer
K&C	Kent & Canterbury Hospital, Canterbury, (EKHUFT)
KMCC	Kent & Medway Cancer Collaborative
KMCRN	Kent & Medway Cancer Research Network
LSESN	London & South East Sarcoma Network
MFT	Medway Foundation Trust
MTW	Maidstone & Tunbridge Wells NHS Trust
NOG	Non-Surgical Oncology Group *(Permanent oncologist sub group of the DOGs with a specific responsibility for chemo/rad pathways and advice to the DOG, Network and GEOGRAPHICAL LOCATIONs on new drugs)*
PoC	Pathway of Care *(Network agreed disease site specific clinical guidelines)*
QEQM	Queen Elizabeth the Queen Mother Hospital, Margate (EKHUFT)
QoL	Quality of life
RAT	Research and Trial Group *(Permanent sub-group of the DOGs with a specific responsibility for taking forward the clinical trials agenda)*
RMH	Royal Marsden Hospital
RNOH	Royal National Orthopaedic Hospital
QVH	Queen Victoria Foundation Trust Hospital East Grinstead
UCLH	University College Hospital London
WHH	William Harvey Hospital, Ashford (EKHUFT)
WK	West Kent

10.0 Document Administration

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Revision History			
Date of revision	New Version Number	Nature of Revision	Confirmation of Accuracy by
01.04.09	2	Minor change to section 2.1.2 comment in bracket moved to end of section	Urology NOG / C Waters
22.07.09	3	Minor change to section 3.3 change to number of cycles for EP 500 in radical treatment.	Urology NOG / S Wade
September 09	3.1-3.2	Changes to renal cell cancer pathway following published NICE guidance on sorafenib / sunitinib / temsirolimus	Urology NOG/ S Wade
November 2009	4	Changes approved	Urology NOG/S Wade
July 2010	4.1	Revision of all sections with regards to treatment pathways and options. Addition of section 5 for penile cancer.	Urology NOG
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March 2011	V5.1	Changes following final NICE guidance for pazopanib and addition of treatment pathway for penile cancers.	Urology NOG
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		Updating funding arrangements required for Abiraterone, Degarelix and Denosumab. Addition of Abiraterone as 1st line treatment for chemo naïve patients – section 2.2.1.1 Updated in line with the NCDF list & NHSE baseline commissioning list	
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July 2014	v11	Published	
September 14	v11.1	Updated in line with NICE TA 316 for Enzalutamide Addition of Abiraterone & Enzalutamide as options for 3rd line treatment of CRPC Addition of Enzalutamide as an option for 1st line treatment of CRPC in patients unfit for docetaxel.	
October 2014	12	Published	Urology NOG
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January 2016	13	Published	C Thomas
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