Prostate Biopsy Alerts
Saskatchewan Prostate Assessment Pathway

Guidelines for the Primary Care Provider for Patient Preparation and the Management of Medications and Complications

September 2016
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INTRODUCTION

The Prostate Biopsy Alerts Document was prepared to serve as a guideline to Primary Care Providers referring their patient to the Prostate Pathway for biopsy. The purpose of this document is to provide direction for the management of patient medications, special considerations and complication management.

ROLES AND RESPONSIBILITIES

<table>
<thead>
<tr>
<th>Pathway Step</th>
<th>Accountability</th>
<th>Management of Patient Preparation &amp; Complications</th>
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</thead>
<tbody>
<tr>
<td>Referral to Pathway</td>
<td>Family Physician</td>
<td>Provide initial biopsy education</td>
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<td>Identify biopsy alerts</td>
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<td>Instruct patients regarding management of medications</td>
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<tr>
<td>Pre-Biopsy Consult</td>
<td>Nurse Navigator</td>
<td>Provide biopsy education</td>
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<td>Confirm patient has instructions for management of medications</td>
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<tr>
<td>Biopsy (intra-hospital visit)</td>
<td>Nursing Units</td>
<td>Pre-biopsy – administer antibiotic prophylaxis according to medical directive</td>
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<td>Post-biopsy – monitor for post-biopsy complications; provide discharge instructions</td>
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<td></td>
<td>Radiologist</td>
<td>Perform biopsy</td>
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<td></td>
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<td>Post-biopsy – manage immediate minor post-biopsy complications</td>
</tr>
<tr>
<td>Post-Biopsy (after discharge)</td>
<td>Family Physician/Emergency Physician/Urologist</td>
<td>Manage patients for minor post-biopsy complications</td>
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<tr>
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<td>Manage major post-biopsy complication (e.g. infection, rectal bleeding or sepsis)</td>
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SECTION 1 - PATIENT PREPARATION

There is no patient preparation required. Patients do NOT need to fast prior to a prostate biopsy and may eat their regular diet.
SECTION 2 - MEDICATIONS

Anticoagulation Agents

All of these anticoagulants should be managed according to the pre-existing conditions they have been prescribed for.

In patients with high risk for stroke and atrial fibrillation, bridging may be appropriate. This can be confirmed with the patient's cardiologist.

Bridging is required for all patients with mechanical heart valves.

<table>
<thead>
<tr>
<th>Anticoagulant Agents</th>
<th>Management</th>
<th>Patient Managed by Primary Care Practitioner</th>
<th>Primary Care Practitioner Actions</th>
<th>Urology Nurse Navigator Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Severe Renal Impairment</strong> CrCl ≤ 30 mL/min</td>
<td><strong>Issue Special Instruction to Patient</strong></td>
<td><strong>Normal Renal Function</strong> CrCl ≥ 50 mL/min</td>
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<tr>
<td>Apixaban (Eliquis)</td>
<td>Apixaban is not recommended when CrCl less than 25mL/min</td>
<td>Give last dose 3 days before procedure (i.e. skip 4 doses) If the patient has had a recent VTE consider IM consult</td>
<td>Give last dose 3 days before procedure (i.e. skip 4 doses) If the patient has had a recent VTE consider IM Consult</td>
<td>Ensure patient has received instruction from Primary Care Practitioner regarding when to discontinue anticoagulant agent.</td>
</tr>
<tr>
<td>Dabigatran (Pradaxa)</td>
<td>Consider IM/hematology Consult Dabigatran is contraindicated when CrCl less than 30mL/min, Hold drug at least 7 days prior to biopsy, assess coagulation status prior to biopsy using thrombin time</td>
<td>Give last dose 5 days before procedure (i.e. Skip 8-12 doses)</td>
<td>Give last dose 3 days before procedure (i.e. skip 4-6 doses)</td>
<td></td>
</tr>
<tr>
<td>Rivaroxaban (Xarelto), prescribed for DVT and PE</td>
<td>Rivaroxaban is not recommended when CrCl less than 30mL/min. Hold drug at least 2 days prior to biopsy</td>
<td>Give last dose 3 days before surgery/procedure (i.e. skip 2 doses) if the patient has had a recent VTE (in the past month) consider IM consult</td>
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</table>

Anticoagulants

- Apixaban (Eliquis)
- Dabigatran (Pradaxa)
- Low Molecular Weight Heparin (LMWH)
  - Tinzaparin (Innohep)
  - Enoxaparin (Lovenox)
  - Dalteparin (Fragmin)
- Rivaroxaban (Xarelto)
- Warfarin (Coumadin)
### Anticoagulant Agents

<table>
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</tr>
</thead>
</table>
| **Warfarin (Coumadin)** | Discontinue Warfarin 4-5 days prior to the procedure. 

Note: If the patient is receiving anticoagulation for a mechanical heart valve, has chronic atrial fibrillation with a CHADS2 score of 5-6, has had a recent arterial thromboembolism (stroke, systemic embolism, transient ischemic attack) within the last three months, a recent venous thromboembolism (deep vein thrombosis, pulmonary embolism) within the last 3 months, has suffered a prior arterial or venous thromboembolism during interruption of warfarin or has a severe thrombophilia with history of venous thromboembolism bridging anticoagulation is recommended. 

All patients should have a PT/INR prior to procedure (INR below 1.5 is acceptable prior to procedure). 

Bridging therapy if patient on anticoagulant for mechanical heart valve, chronic atrial fibrillation with a CHADS2 score of 5-6, recent arterial thromboembolism (stroke, systemic embolism, transient ischemic attack) within last three months, recent venous thromboembolism (DVT, PE) within last three months or venous thromboembolism during interruption of warfarin or severe thrombophilia with history of venous thromboembolism with low molecular weight heparin should be considered for some patients.

Refer patients to local LMWH bridging programs if available in your community. If not available, use the Thrombosis Canada Peri-operative Anticoagulant Algorithm for guidance on peri-procedural bridging – see website link below. 

Reinitiate anticoagulation following the procedure. | Ensure patient has received instruction from Primary Care Practitioner regarding when to discontinue anticoagulant agent. And bridging orders if applicable. 

Ensure INR ordered prior to procedure. |
| **Low Molecular Weight Heparin** | Withhold LMWH for 24 hours prior to procedure. | Reinitiate anticoagulation 24-48 hours post-procedure |

The indication for the anti-coagulant agent has to be reviewed with the patient, his primary care practitioner or cardiologist and only after that should the anti-coagulant agent be stopped (Canadian Urological Association recommendations).

Thrombosis Canada Peri-operative Anticoagulant Management Algorithm: [http://thrombosiscanada.ca/?page_id=502&calc=perioperativeAnticoagulantAlgorithm](http://thrombosiscanada.ca/?page_id=502&calc=perioperativeAnticoagulantAlgorithm)

1 Dr. Rodney Zimmermann (Cardiologist)-RQHR August 2016

Reference documents include the Thrombosis Canada Recommendations for Perioperative Interruption 2015, College of CHEST Physicians (CHEST 2012: 141(2)(Suppl):e326S-e350S)
**Antiplatelet Agents**

Antiplatelet agents interfere with platelet function and impair clot formation.

### Antiplatelet Agents

- ASA/NSAIDS
- Mesalamine (Asacol)
- Thienopyridines
  - Clopidogrel (Plavix)
  - Ticlopidine (Ticlid)
  - Prasugrel (Effient)
- Ticagrelor (Brilinta)

### Management

<table>
<thead>
<tr>
<th>Antiplatelet Agents</th>
<th>Patient Managed by Primary Care Practitioner</th>
<th>Urology Nurse Navigator Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASA</td>
<td>Discontinue 7 – 10 days prior to procedure.</td>
<td>If patient is at high CV/stroke risk, has had recent ACS or stent placement (6 weeks for Bare Metal Stent or 12 months for Drug Eluting Stent) and/or is taking more than one antiplatelet agent, consult the specialist who started the anti-platelet agents.</td>
</tr>
<tr>
<td>NSAIDS</td>
<td>Discontinue 3-5 days prior to procedure.</td>
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<tr>
<td>Mesalamine (Asacol)</td>
<td>No need to stop mesalamine prior to procedure.</td>
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<tr>
<td>Clopidogrel (Plavix)</td>
<td>Discontinue for 7 days prior to procedure.</td>
<td>If patient is at high CV/stroke risk, has had recent ACS or stent placement (6 weeks for BMS or 12 months for DES) and/or is taking more than one antiplatelet agent, consult the specialist who started the anti-platelet agents.</td>
</tr>
<tr>
<td>Ticlopidine</td>
<td>Discontinue 10-14 days prior to procedure.</td>
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<tr>
<td>Prasugrel</td>
<td>Discontinue 5-7 days prior to procedure.</td>
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</tr>
<tr>
<td>Ticagrelor</td>
<td>Discontinue 5 days prior to procedure.</td>
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</tbody>
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Reference documents include the Canadian Cardiovascular Society (Canadian Journal of Cardiology 27 (2011) S1—S59), and College of CHEST Physicians (CHEST 2012: 141(2)(Suppl):e3265-e350S)
SECTION 3 - SPECIAL CONSIDERATIONS

Prevention of Infective Endocarditis

Antibiotic prophylaxis is no longer indicated in association with genitourinary procedures solely for the prevention of infective endocarditis. Consideration of antibiotic prophylaxis may be considered for those with implanted mechanical valves on a case by case basis.

Antibiotic prophylaxis is not indicated in association with previous stenting or previous stand-alone bypass surgery.

MRSA

There is no clinical indication to identify MRSA positive patients or UTI in preparation for Prostate Biopsy. The administration of prophylactic vancomycin prior to the procedure is no longer indicated. All patients should be screened for Urinary bacteruria prior to the procedure.

3 Dr. Rodney Zimmermann (Cardiology) August 2016
Reference Documents include the American Heart Association

4 Dr. Jessica Minion (Microbiologist) August 2016
**Antibiotic Prophylaxis**

Patients undergoing prostate biopsy will receive antibiotic prophylaxis as per the Medical directives of the region. This medication will be administered by the Prostate Assessment Centre. The following directives have been provided for informational purposes only.

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### Transrectal Ultrasound Guided Prostate Biopsy

**Antibiotic Prophylaxis Medical Directive Order Set**

**MD-003**

These orders are for all transrectal ultrasound guided prostate biopsy patients. Based on an individual assessment of each patient, the registered nurse may administer medications as directed.

**Antibiotic Prophylaxis**

1. **First line**
   - Ciprofloxacin extended release 1,000 mg PO 60 minutes prior to the anticipated biopsy time
   - If one of the following contraindications exist, do not administer ciprofloxacin; give cefTRAXone as indicated below and notify the attending radiologist:
     - Known hypersensitivity or allergy to ciprofloxacin or any member of the quinolone class of antibiotics (see reference list)
     - Administration of IZANidine within the last 24 hours

2. **Second line**
   - If contraindications exist to ciprofloxacin then
     - If a known hypersensitivity or allergy to ciprofloxacin or any member of the quinolone class of antibiotics or IZANidine has been administered within the last 24 hours, THEN:
       - CefTRAXone 1 g IV 80 minutes or less prior to the anticipated biopsy time
     - If one of the following contraindications exist, do not administer cefTRAXone and notify the attending radiologist:
       - Known allergy to cephalosporins or a history of anaphylaxis to penicillins or other bet-lactam antibiotics (see reference list)
   - Please call the attending radiologist if you have any concerns

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Antibiotic Prophylaxis for Transrectal Prostate Biopsy

All RQHR patients undergoing Transrectal Prostate Biopsy should receive an outpatient prescription for these 2 doses and take as indicated below:

- **Ciprofloxacin 500mg** (regular release) PO at least 1h prior to biopsy† (e.g. just prior to leaving for the hospital). There is no need for repeat doses, however, one additional dose post biopsy may be taken approximately 12 hours after the initial dose (Max. prophylaxis duration ≤ 24h)†

**Alternative Antibiotics**†

Cefazolin* 1g IV x1 (or, IM deeply into a large muscle mass) 1h prior to biopsy

*NOTE: The only agents for which oral administration is acceptable for transrectal prostate biopsies are the quinolones

*If severe allergy to beta-lactam antibiotics (i.e. amoxicillin, kines): Gentamicin 1.5mg/kg IV x1 plus Metronidazole 500mg IV or Clindamycin 600mg IV x1

Background Information/Evidence

Transrectal prostate biopsy antibiotic prophylaxis is indicated in all patients - Level of evidence: Ib†

A large RCT of 537 patients receiving oral ciprofloxacin or placebo before transrectal needle biopsy of the prostate revealed the incidence of bacteriuria to be significantly lower in the antimicrobial group. In a three-armed RCT (231 patients) comparing placebo, a single dose of ciprofloxacin and metronidazole, and the same combination twice a day for three days, the incidence of all infectious complications and specifically urinary tract infection was significantly lower in both antimicrobial groups. Moreover, the single dose was as effective as the three-day dosing. Additional RCTs confirm the equivalence of single-dose or one-day regimens compared to three day regimens.

“Starting with January 2012 outpatient encounters, the IM route for all recommended antibiotics will be acceptable for transrectal prostate biopsies. Recommended antibiotics for transrectal prostate biopsies include:†

- Fluoroquinolones (po/IV), 1st / 2nd / 3rd generation cephaplorins (IV only*)
- Alternatives: clindamycin, amnoglycoside + metronidazole or clindamycin are general alternatives to penicillins and cephaplorins in patients with penicillin allergy, even when not specifically listed

*Note that the only agents for which oral administration is acceptable for transrectal prostate biopsies are the quinolones

An important change in antimicrobial prophylaxis pertaining to urologists is that antimicrobials are no longer recommended by the American Heart Association in association with genitourinary procedures solely to prevent infectious endocarditis†

References:


Prepared by Dr. L.A. Sala, RQHR, Pharmacy

Revised January 2013, Last reviewed: July 2014
SECTION 4 -

COMPLICATIONS AND ACCOUNTABILITY FOR MANAGEMENT

Radiologist will manage any minor complications independently. If a major complication arises in which the radiologist cannot manage the patient’s care, the patient will be sent to the emergency department for further assessment. The emergency department will refer to specialist as required.