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

Saskatoon Health Region

Regina Qu'Appelle Health Region

Government of Saskatchewan

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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

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

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 [1]

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.

Anticoagulants

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

Anticoagulant Agents	Management				
	Patient Managed by Primary Care Practitioner				
	Issue Special Instruction to Patient			Primary Care Practitioner Actions	Urology Nurse Navigator Actions
	Severe Renal Impairment CrCl ≤ 30 mL/min	Moderate Renal Impairment CrCl 31-49 mL/min	Normal Renal Function CrCl ≥ 50mL/min		
Apixaban (Eliquis)	Apixaban is not recommended when CrCl less than 25mL/min	Give last dose 3 days before procedure (i.e. skip 4 doses) If the patient has had a recent VTE consider IM consult	Give last dose 3 days before procedure (i.e. skip 4 doses) If the patient has had a recent VTE consider IM Consult	Consider thrombin time if worried about bleeding risk on day of procedure (does not quantify anticoagulation activity, but if normal, there is likely little drug in the patient's system. Thrombosis Canada lists prostate biopsy as a high bleeding risk procedure. Reinitiate anticoagulation 2 days approximately 48 hours) post-operatively as per guidelines.	Ensure patient has received instruction from Primary Care Practitioner regarding when to discontinue anticoagulant agent.
Dabigatran (Pradaxa)	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	Give last dose 5days before procedure (i.e. Skip 8-12 doses)	Give last dose 3 days before procedure (i.e. skip 4-6 doses)		
Rivaroxaban (Xarelto), prescribed for DVT and PE	Rivaroxaban is not recommended when CrCl less than 30mL/ min. Hold drug at least 2 days prior to biopsy	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			

Anticoagulant Agents	Management		
	Patient Managed by Primary Care Practitioner		Urology Nurse Navigator Actions
	Issue Special Instruction to Patient	Primary Care Practitioner Actions	
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 thrombo-embolism (stroke, systemic em-bolism, transientischemis attach) within last three months, recent venous thromboembo-lism (DVT, PE) within last three months or venous thromboem-bolism during interruption of warfarin or severe thrombophil-ia with history of venous throm-boembolism 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 availa-ble, use the Thrombosis Canada Peri-operative Anticoagulant Algorithm for guidance on peri-procedural bridging – see web-site 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

[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 [2]

Antiplatelet agents interfere with platelet function and impair clot formation.

Antiplatelet Agents

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

Antiplatelet Agents	Management		
	Patient Managed by Primary Care Practitioner		Urology Nurse Navigator Actions
	Issue Special Instruction to Patient	Refer Patient to Specialist	
ASA	Discontinue 7 – 10 days prior to procedure.	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	
NSAIDS	Discontinue 3-5 days prior to procedure.		
Mesalamine (Asacol)	No need to stop mesalamine prior to procedure.		
Clopidogrel (Plavix)	Discontinue for 7 days prior to procedure.	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 antiplate-let agent, consult the specialist who started the anti-platelet agents	
Ticlodipine	Discontinue 10-14 days prior to procedure.		
Prasugrel	Discontinue 5-7 days prior to procedure.		
Ticagrelor	Discontinue 5 days prior to procedure.		

[2] Reference documents include the Canadian Cardiovascular Society (Canadian Journal of Cariology 27 (2011) S1—S59), and College of CHEST Physicians (CHEST 2012: 141(2)(Suppl):e326S-e350S)

SECTION 3 - SPECIAL CONSIDERATIONS

Prevention of Infective Endocarditis [3]

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 [4]

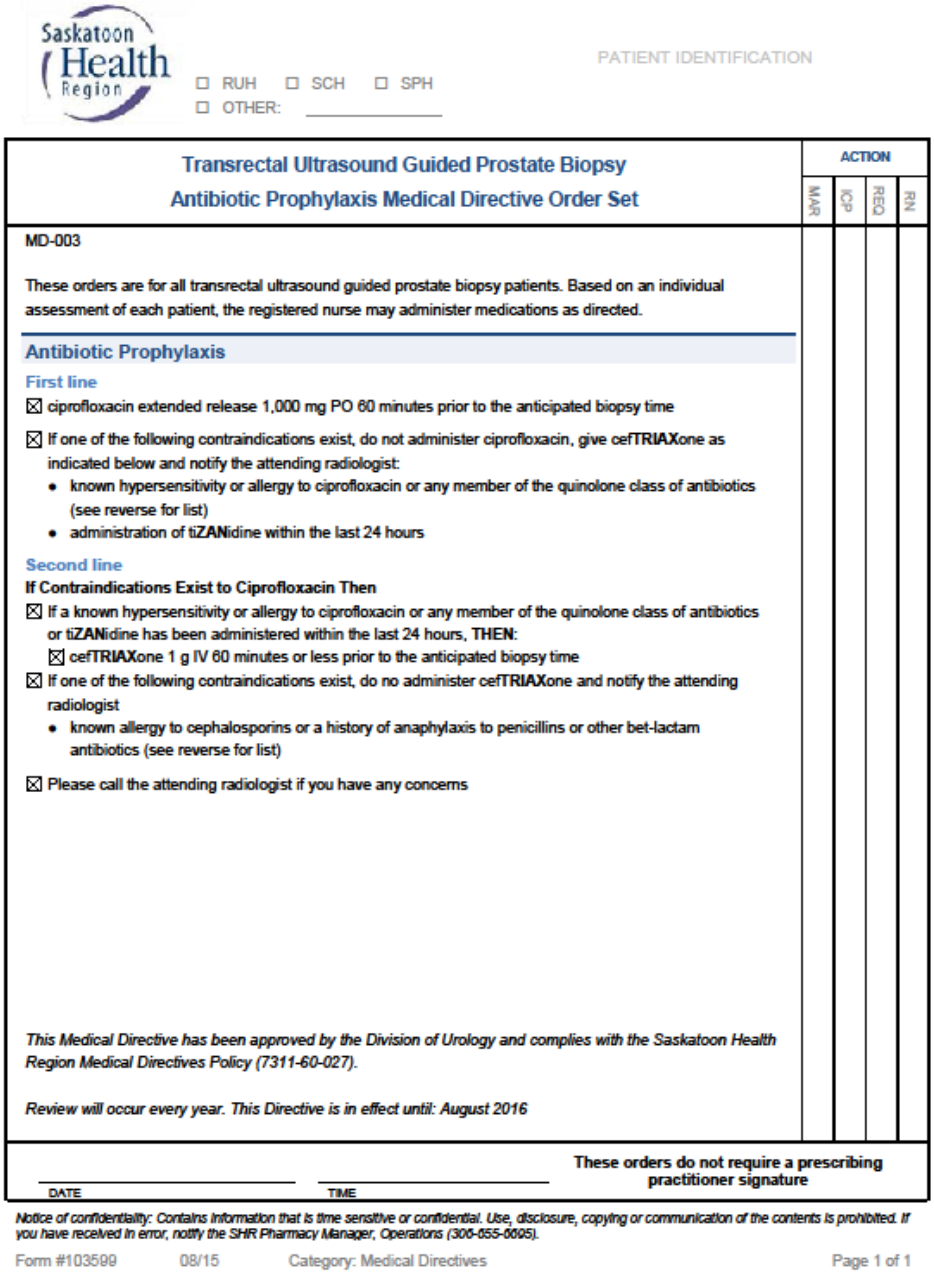
There is no clinical indication to identify MRSA positive patients or UTI in preparation for Prostate Biopsy. The administration of prophylactic vancomycin prior to the procedure is no longer indicated. All patients should be screened for Urinary bacteruria prior to the procedure.

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

4 Dr. Jessica Minion (Microbiologist) August 2016

Antibiotic Prophylaxis [5]

Patients undergoing prostate biopsy will receive anitbiotic 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.



Saskatoon Health Region

☐ RUH ☐ SCH ☐ SPH
☐ OTHER: _____

PATIENT IDENTIFICATION

Transrectal Ultrasound Guided Prostate Biopsy
Antibiotic Prophylaxis Medical Directive Order Set

ACTION: MAR | ICP | REQ | RN

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

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 ceftRIAXone as indicated below and notify the attending radiologist:
- known hypersensitivity or allergy to ciprofloxacin or any member of the quinolone class of antibiotics (see reverse for list)
- administration of tiZANidine within the last 24 hours

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 tiZANidine has been administered within the last 24 hours, **THEN**:
☒ ceftRIAXone 1 g IV 60 minutes or less prior to the anticipated biopsy time

☒ If one of the following contraindications exist, do no administer ceftRIAXone and notify the attending radiologist
- known allergy to cephalosporins or a history of anaphylaxis to penicillins or other bet-lactam antibiotics (see reverse for list)

☒ Please call the attending radiologist if you have any concerns

This Medical Directive has been approved by the Division of Urology and complies with the Saskatoon Health Region Medical Directives Policy (7311-60-027).

Review will occur every year. This Directive is in effect until: August 2016

DATE _____ TIME _____

These orders do not require a prescribing practitioner signature

Notice of confidentiality: Contains information that is time sensitive or confidential. Use, disclosure, copying or communication of the contents is prohibited. If you have received in error, notify the SHR Pharmacy Manager, Operations (306-655-6695).

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[5] See SHR medical directives policy (7311-60-027) for approval process. Reference documents include Best Practice Policy Statement on Urologic Surgery Antimicrobial Prophylaxis (updated September 2008), John Hopkins Medicine – Antibiotic Guide (www.hopkinsguides.com), European Association of Urology – Guidelines on Urological Infections (2009) and The Cochrane Collaboration – Antibiotic Prophylaxis for Transrectal Prostate Biopsy. Contributions by Dr. Alice Wong, Brenda Thiessen (Pharmacist), Leah Heilman (Pharmacist) and Cheryl Kolbinson (Pharmacist).

Regina Qu'Appelle HEALTH REGION

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**[1] (e.g. just prior to leaving for the hospital). There is no need for repeat doses,[1] however, one additional dose post biopsy may be taken approximately 12 hours after the initial dose. (Max. prophylaxis duration ≤ 24h)[1]

Alternative Antibiotics[1]

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. anaphylaxis, hives):
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[1]

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 tinidazole, 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:**[1]

- Fluoroquinolones (po/IV), 1st / 2nd /3rd generation cephalosporins (IV only*)
- Alternatives: clindamcyin, aminoglycoside + metronidazole or clindamycin, are general alternatives to penicillins and cephalosporins 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[2]

References:

1. Best Practice Policy Statement on Urologic Surgery - Antimicrobial Prophylaxis 2007 American Urological Association (AUA) Education and Research, Inc.® Updated September 2008. Revised August 11, 2011

2. American Heart Association (AHA) Guidelines in *Circulation*. 2007;116:1736-1754. http://circ.ahajournals.org/content/116/15/1736.full.pdf)

Prepared by Dr. LA Sulz, 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.