

TEACHING YOUR STROKE PATIENTS ABOUT THEIR MEDICATION

Please refer to Module 8: Secondary Stroke Prevention for additional information

Blood Pressure Medication

Angiotensin Converting Enzyme (ACE) Inhibitor

- Take same time every day
- Contraindicated in patients with renal stenosis
- May increase creatinine, urea and potassium
- May have a persistent, dry cough
- Can cause angioedema (1/500)
- Other Side Effects:
 - Dizziness, feeling faint
 - Swelling of feet
 - Diarrhea
 - Taste disturbance
 - Headache

More Details:

- Generic names for these medications end in “-pril”
- **ACE Inhibitors** dilate arterial and venous vessels by blocking the conversion of Angiotensin I to Angiotensin II
- In order for the medication to be effective advise your patient to take medication at the **same time every day**
- It is important to know that the ACE Inhibitor can cause Bradykinin release which can cause a persistent dry cough and angioedema (swelling of the mouth, face) (1/500 people)
- Other side effects include low blood pressure, less commonly swelling of the feet, diarrhea, headache, taste disturbance, or feeling dizzy or faint, and possibly sexual dysfunction
- Remember to advise the patient to have their creatinine checked 1 week after starting ACE Inhibitor

Angiotensin II Receptor Blockers

- Well tolerated
- Contraindicated in patients with renal stenosis
- May increase creatinine, urea and potassium

More Details:

- ARBs permit dilatation of arteries by preventing angiotensin from binding (allows blood vessels to relax and widen a bit causing a lower BP)
- Well tolerated
- Orthostatic hypotension may be seen due to vasodilatation
- Contraindicated in patients with renal stenosis
- Need to monitor creatinine, urea and potassium
- Generic names for these medications end in “-tans”

Lipid Medication

Statins

- Take once a day with largest meal in evening
- May be prescribed when cholesterol levels are normal
- Bloodwork required for follow-up
- May interact with antidepressants, antibiotics & immunosuppressants
- Avoid grapefruit/grapefruit juice
- Possible side effects:
 - Mild nausea, diarrhea, constipation
 - Some muscle pain/weakness is normal (2-10%)
 - Extreme muscle pain/weakness (serious but rare)

More Details:

- To be effective, take your statin once a day. It is usually best to take your statin with the largest meal of the day, but it can also be taken at bedtime.
- Even if cholesterol level is normal, a statin helps stabilize plaque and it also helps decrease inflammation and keep the vessels healthy
- A baseline liver function test (LFT) is needed before starting a statin
- Patients will be asked to have cholesterol profile redrawn in 6-8 weeks after starting statin to ensure decrease in LDL
- A repeat liver function test is done semi-annually during the 1st year or until 1 year after last dose increase. If LFTs are more than 3 times upper limit of normal the statin should be discontinued

- Advise patient that statins may interact with other medications including antidepressants, antibiotics and immunosuppressants
- Avoid grapefruit juice as it may increase the risk of side effects
- Side effects are usually mild and improve on their own over time. If you experience side effects consult your physician. The most common complaint is gas, stomach pain, indigestion and constipation.
- After starting a statin, be aware of any NEW muscle pain, or weakness as this could be a sign of a rare, but serious side effect (rhabdomyolysis)

Antiplatelet Therapy

Aspirin

- Take one pill, once a day, everyday
- More is not better
- Most common side effects include
 - GI upset (take with meals, use ECASA)
 - Bruise easier
 - Bleed longer
- Advise patient to consult a doctor immediately if he or she has unusual or excessive bleeding

Aggrenox (Combination of two meds in one pill (ASA (25 mg) and extended release dipyridamole (200mg))

- Do not chew or crush
- 1/5 people will have a headache in first 5 days. If the headache is intolerable, advise the patient to call the *Physician*.
- If by the 5th day HA is intolerable, call the physician and resume ASA
- Other side effects:
 - GI upset (take with food or water)
 - Bleeding
- Offer patient Tylenol plain to control headache

Clopidrogel (Plavix – not to be confused with Pradax)

- Take once a day, every day
- Best to take with meals
- Side effects: usually mild and improve on their own
 - GI upset
 - Bleeding
 - Skin rash

Anticoagulation Therapy

Warfarin (Coumadin)

- Take once a day, every day
- Best to take with meals
- To be used in all cases of atrial fibrillation in the severe heart-valve disorder, including the presence of a mechanical valve
- Side effects: usually mild & improve on their own
 - GI upset
 - Bleeding
 - Skin rash

More Details:

- Initially, the patient may need daily or several blood tests every week to determine the appropriate dose of Coumadin
- Some patients require as little as 2mg per day to achieve an INR between 2-3, others require as much as 15mg or more. The dosage required reflects the amount of vitamin K in the diet and the metabolism of Coumadin. A higher dose does not put the patient at a greater risk of side effects. It is the INR that matters, not the dose.
- Advise your patient to always take Coumadin at the same time every day
- Advise your patients not to make drastic changes in their diet, or eating habits without consulting their physician first. Vitamin K plays a role in the clotting process, so it's important to keep levels of vitamin K consistent in their diet. Examples of food containing vitamin K: asparagus, broccoli, brussel sprouts, cucumber with peel, endives, lettuce, spinach, turnip greens, pistachio nuts, parsley, and watercress. There is no "correct" amount of Vitamin K to consume—consistency is the best way to go.
- Alcohol may affect the action of Coumadin therapy, and should only be consumed in moderation (1drink/day). A change in routine can change their INR.
- Avoid all body contact sports and other activities in which injuries are common. Advise your patient to always wear a helmet when cycling.

Patients should be instructed to report any of the following to a *Physician* immediately:

- Any falls or injuries to their head or back
- Fever and chills for more than 1-2 days
- Vomiting, nausea or diarrhea for more than 1-2 days
- Repeated or persistent severe chest pain
- Persistent swelling of feet and lower legs (for more than 1-2 days), especially if painful
- Yellow discoloration of eyes and skin or changes to their general health

Novel Oral Anticoagulant Agents

Dabigatran etexilate (Pradaxa)

- Take twice a day, every day, at the same time (12 hours apart)
- Available in two doses: 150 mg and 110mg
- INR not required
- More protective and lower bleeding risk than warfarin
- For non-valvular atrial fibrillation
- May be taken with or without food
- Swallow whole; cannot be broken, chewed, crushed, or dissolved
- Not to be sprinkled on foods or in liquids
- No antidote
- Side effects:
 - Gastric-like symptoms
 - Dyspepsia
 - Bleeding

More Details:

- Physician will prescribe the optimal dose considering the patient case
- Watch for signs of bleeding
- Never double a dose if a dose is missed
- Anti-coagulation monitoring is not required
- No antidote
- Surgeries: hold for 1-2 days (if CrCl greater than 50), hold 3-5 days (if CrCl less than 50, and hold 24 hours prior to ablation for atrial fibrillation)

Rivaroxaban (Xarelto)

- Take once a day, every day, at the same time
- Available in two doses: 200 mg and 15 mg (if CrCl is 30-49)
- INR not required
- More protective and lower bleeding risk than warfarin
- For non-valvular atrial fibrillation
- Food increases the absorption of 20 mg dose but not 10 mg dose
- Side effects:
 - GI bleed
 - Transfusion
 - ICH

More Details:

- Watch for signs of bleeding
- Anticoagulation monitoring is not required
- Surgeries: hold for at least 24 hours

Apixaban (Eliquis)

- Take twice a day, every day at the same time
- Available in two doses: 5 mg and 2.5 mg (if the person fits two of the following criteria: age 80 or over, weight 60kgs or less, and SrCr 133 or greater)
- INR not required
- More protective and lower bleeding risk than warfarin
- For non-valvular atrial fibrillation
- Food has no effect
- Side effects:
 - Bleeding

More Details:

- Watch for signs of bleeding
- Anti-coagulation therapy not required
- Surgeries: hold at least 24 hours

(Taken from table 2.6 of the 2012 Canadian Best Practice Recommendations for Stroke Care: Prevention of Care)

References

Canadian Best Practice Recommendations for Stroke Care (2013). Canadian Stroke Network and Heart and Stroke Foundation of Canada. Ottawa, Ontario Canada.

<http://www.heartandstroke.on.ca/atf/cf/%7B33C6FA68-B56B-4760-ABC6-D85B2D02EE71%7D/2P%20Piece%2010%20Acute%20Inteventions%20final.ppt>.



ACUTE STROKE UNIT ORIENTATION

2018

Complete this section using your organization's own forms. Examples include pre-printed order sets, care pathways, protocols, observation record or documentation forms, screening tools, patient education checklist, etc.

Hospital Specific Chart Forms

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.



ACUTE STROKE UNIT ORIENTATION

2018

Name of Organization – Specific Chart Forms

Example

1. tPA Stroke Protocol
2. Standards of Care for Acute Stroke Patients
3. Non tPA Order Set
4. TIA Order Set
5. Inpatient Stroke Protocol
6. NIHSS Observation Record
7. Secondary Stroke Prevention Clinic Referral Form



ACUTE STROKE UNIT ORIENTATION

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Other Resources:

1. Southwestern Ontario Stroke Network (SWOSN) Information Sheet
2. Ontario Stroke System (OSS) Information Sheet
3. Hemispheres Stroke Competency Information Sheet
4. Stroke Organizations: Lists and Websites
5. Participant Request Form to attend a Stroke Workshop/Conference
6. Mentoring Request Form