# Enhanced Primary Care Pathway: Essential Tremor

## 1. Focused summary of ET relevant to primary care

Essential Tremor (ET) and Parkinson's Disease (PD) are two of the most common movement disorders encountered by family doctors; both present with tremor but the 2 disorders are treated differently. The diagnosis of ET is clinical and other than common metabolic conditions, investigations are not required. Treatment can produce significant benefit and may be initiated without a neurology referral.

ET is the most common movement disorder; the tremor is present when holding objects, performing tasks and is usually of slightly higher frequency (5-8 Hz). It is important to exclude secondary conditions such as hyperthyroidism, liver and renal dysfunction/failure, and drugs causing postural tremor (valproate, lithium, SSRIs, SNRIs, amiodarone) as other causes of a postural tremor. Excessive caffeine consumption (more than 2 or 3 eight oz cups of coffee per day, chocolate, soft drinks) can also cause tremor that looks like ET.

ET is typically characterized by a significant family history of the same tremor and beneficial response to 1-2 drinks of wine or beer (or other alcoholic beverage; it is important to ensure that alcohol dependency is not present as potential self-treatment). Depending on the family history, the tremor may present at a wide range of ages and many patients with ET do not need treatment. However, ET is a progressive condition. When there is sufficient functional impairment (writing, using utensils, working), it is appropriate to discuss medication as treatment.

**COMPARISON OF TREMOR IN ET AND PD**

| Essential Tremor | Parkinson's Disease |
|---|---|
| • Head/voice tremor<br>• Bilateral onset of tremor, usually hands<br>• ETOH responsive (1-2 drinks wine/beer)<br>• No cogwheel rigidity<br>• Writing large and tremulous<br>• Tremor better with walking<br>• Positive family history<br>• Tremor present with holding objects or performing tasks | • Chin tremor<br>• Unilateral onset of tremor/bradykinesia<br>• ETOH unresponsive<br>• Cogwheel rigidity<br>• Writing small (micrographia)<br>• Tremor emerges with walking with reduced arm swig<br>• Often, no clear family history<br>• Tremor present at rest |

| 2. Checklist to guide your in-clinic review of this patient with ET symptoms |
|---|
| ☐ Signs of ET |
| ☐ No signs of Parkinson Disease |
| ☐ Rule out secondary conditions (hyperthyroidism, liver/kidney problems, drugs causing tremor) |
| ☐ Lifestyle factors that contribute to ET have been identified and discussed with patient |
| ☐ Patient has trial of propranolol (for 8-12weeks) followed by review and optimization |
| ☐ If contraindication or failed trial of beta blockers, trial of topiramate (for 8-12 weeks) followed by review and optimization |
| ☐ If necessary trial of third line treatment with Primidone (for 8-12 weeks) followed by review and optimization |

| 3. Links to additional resources | |
|---|---|
| **For physicians:** | http://www.neurology.org/content/77/19/1752.full.pdf+html |
| | http://www.mayoclinic.org/diseases-conditions/essential-tremor/home/ovc-20177826 |
| | http://www.cfp.ca/content/56/3/250.full.pdf+html |
| **For patients:** | UpToDate ® -Beyond the Basics Patient Information (freely accessible) http://www.uptodate.com/contents/tremor-beyond-the-basics?source=search_result&search=essential+tremor&selectedTitle=12~31 |
| | University of Calgary Department of Clinical Neurosciences Movement clinic website (especially resources tab): www.dcns.ca/programs/movementdisorders |
| | http://www.essentialtremor.org/wp-content/uploads/2013/06/patienthandbook02142013-final1.pdf |
| | http://patient.info/health/essential-tremor |
| | http://tools.aan.com/professionals/practice/pdfs/ET_patients.pdf |

## 4. Clinical flow diagram with expanded detail

This AHS Calgary Zone pathway has been developed with consideration of these guidelines. **The following is best-practice clinical pathways for management of ET in the primary care medical home, which includes a flow diagram and expanded detail:**

Primary Care Networks
CALGARY AND AREA

Specialist *LINK*

Alberta Health Services

# SUSPECTED ESSENTIAL TREMOR (ET) PATHWAYS

**Specialist *LINK***
Local: **403.910.2551** | Toll free: **1.844.962.5465 (LINK)** | www.specialistlink.ca

**NEUROLOGY REFERRAL**

**Red Flags/Exclusionary**
- Unilateral tremor
- Signs of Parkinsonism
- Rapidly progressive (weeks - months)

*YES*

**Non-Neurological causes:**
- Hyperthyroidism
- Liver/Kidney
- Medications

*TREAT AS NEEDED*

*NO*

**Confirmatory Features**
- Symmetrical onset
- Tremor while holding objects (not at rest)
- Family history of Essential Tremor present
- Better with 1-2 drinks alcohol

*YES*

**Medication/Lifestyle Review**
- Alcohol - ensure no dependency
- Caffeine - intake not excessive
- Medication induced tremor
  (valproate, lithium, SS/NRIs, amiodarone)

*NONE OF THE ABOVE OR NO IMPROVEMENT WITH D/C*

**Propranolol Trial**
- If no contraindications
  - 20 prn or 240-320 mg daily or 60-80 mg LA daily

*If no improvement or worsening*

**Topiramate Trial**
- If no contraindications
  - Start 12.5 mg bid, gradually increase to 25-50 mg bid

*If no improvement or worsening*

**Primidone Trial**
- Start 62.5 mg qhs, gradually increase to 125 mg bid

*IF NO IMPROVEMENT OR WORSENING*

December, 2016

## SUSPECTED ESSENTIAL TREMOR PATHWAY

### Trial of Propranolol

- When warranted, medications for ET include beta blockers (propranolol, preferentially), topiramate and primidone.
- If there are no contraindications (asthma, COPD, depression), propranolol is considered first line therapy.
- Propranolol may be taken on a prn basis for anticipated situations where the tremor will predictably worsen (20 mg 30 minutes prior to event).
- Propranolol may also be taken on a regular basis (40-80 mg/day regular or 60 mg-80 mg/day long-acting); allow 4 weeks between visits for evaluation and dose increases.
- Potential side effects of Propranolol include fatigue, hypotension and bradycardia.

Starting Propranolol 20 mg.

| Week | AM | PM |
|---|---|---|
| 1 | ----- | 1 tablet (20 mg) |
| 2 | 1 tablet | 1 tablet |
| 3 | 2 tablets | 2 tablets |
| 4 | 3 tablets | 3 tablets **EVALUATE** |
| *Evaluate at 60 mg bid; May increase further as needed and as tolerated to 240-320 mg per day.* | | |
| 5 | 4 tablets | 4 tablets |
| 6 | 5 tablets | 5 tablets |
| 7 | 6 tablets | 6 tablets |

Propranolol LA 60 or 80 mg may be started once per day and increased to bid after evaluation. Propranolol LA is usually tried after regular propranolol has been proven to be effective but the patient would prefer once per day dosing.

**Trial of Topiramate**

- Topiramate may be tried if beta-blockers are contraindicated or have not been helpful.
- The starting dose of Toprimate would be 12.5 mg od increasing this gradually over a number of weeks to 25-50 mg bid.
- Potential side effects of Topiramateinclude rash (drug should be stopped), feeling dizzy and off balance, weight loss and cognitive slowing.
- Topiramate is contraindicated with glaucoma or nephrolithiasis.

Starting Topiramate 25 mg

| Week | AM | PM |
|---|---|---|
| 1 | ----- | ½ tablet |
| 2 | ½ tablet | ½ tablet |
| 3 | ½ tablet | 1 tablet |
| 4 | 1 tablet | 1 tablet |

*May increase further as needed/tolerated to 50 mg bid.*

**Trial of Primidone**

- Primidone would be the third drug of choice, but produces the most side effects. Watch particularly for nausea, dizziness or problems with balance in elderly patients.
- The starting dose for Primidone is 62.5 mg qhs and increase the medication weekly until 125 mg bid; titration may be slower if side effects develop.
- The dose of Primidone may be gradually increased to 250 mg bid, but generally, side effects limit increasing the medication to this dose.
- For patients on warfarin, the INR should be watched for potential changes while on Primidone.

Starting Primidone 125 mg

| Week | AM | PM |
|---|---|---|
| 1 | ----- | ½ tablet |
| 2 | ½ tablet | ½ tablet |
| 3 | ½ tablet | 1 tablet |
| 4 | 1 tablet | 1 tablet |

*Evaluate at 125 mg bid; increase as tolerated to 250 mg bid.*