Red Flags

Low Back Pain

[Low Back Pain Red Flag (fpnotebook.com)]

Headaches

[Headache Red Flag (fpnotebook.com)]

Abdominal Pain

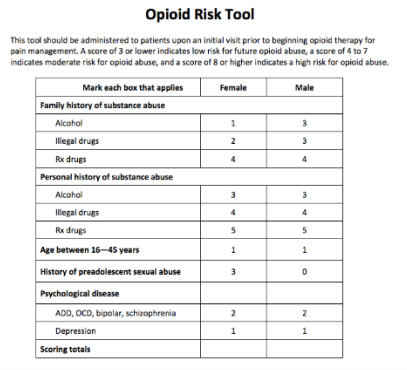
[Abdominal Pain Evaluation (fpnotebook.com)]

Assessment Tools

[Chronic Pain Management Toolkit - Brief Pain Inventory (aafp.org)]

Opioids

Opioid Risk Tool (ORT) – most commonly used, but not necessarily with the best evidence



Opioid Risk Tool

This tool should be administered to patients upon an initial visit prior to beginning opioid therapy for pain management. A score of 3 or lower indicates low risk for future opioid abuse, a score of 4 to 7 indicates moderate risk for opioid abuse, and a score of 8 or higher indicates a high risk for opioid abuse.

Mark each box that applies	Female	Male
Family history of substance abuse		
Alcohol	1	3
Illegal drugs	2	3
Rx drugs	4	4
Personal history of substance abuse		
Alcohol	3	3
Illegal drugs	4	4
Rx drugs	5	5
Age between 16—45 years	1	1
History of preadolescent sexual abuse	3	0
Psychological disease		
ADD, OCD, bipolar, schizophrenia	2	2
Depression	1	1
Scoring totals		

Prescription Opioid Misuse Index (POMI) – closely aligned with DSM criteria for OUD; COMM also aligned with DSM, but much longer than POMI

[1539789463_tfp222opioidscreeningfv.pdf (acfp.ca)]

Screener and Opioid Assessment for Patients with Pain (SOAPP) (a more behaviour-based assessment)

[Microsoft Word - SOAPP Version 1 14Q.SFB.doc (asu.edu)]

Opioids in Special Populations

Pain Medications in Pregnancy

FDA pregnancy risk classification categories for pain medications

FDA classification	Definition	Examples
Category A	- No risk to fetus in controlled human studies.	Multivitamin
Category B	- No teratogenic risk to fetus in animal studies. - No teratogenic risk to fetus report in well controlled human studies.	Acetaminophen, ibuprofen,naproxen, morphine, fentanyl, oxycodone, hydromorphone, methadone, caffeine, SSRIs, prednisolone.
Category C	- Teratogenic or embryocidal risk in animal studies. - No controlled studies in human.	Codeine, tramadol, gabapentin, lamotrigine, venlafaxine, duloxetine, lidocaine, sumatriptan, aspirin, ketorolac, celebrex.
Category D	- Positive evidence of human fetal risk, benefits outweigh risks	TCA, carbamazepine, topiramate, benzodiazepine
Category X	- Positive evidence of significant fetal risk.	Ergotamine

All **opioid** are **category D** if used for prolonged periods or in large doses near term.

James P. Rathmell, et al. Anesth Analg 1997;85:1074-87.

Safe	Caution	Avoid
Acetaminophen Short-term use of morphine, fentanyl, oxycodone, hydromorphone, methadone Prednisolone	Ibuprofen Naproxen Lidocaine Sumatriptan	Codeine, Celebrex tramadol TCA SNRIs Anticonvulsants Ergotamine high-dose/long-term use of opioids

Summary of medication safe in pregnancy

Summary of medications safe in lactation

Safe	Caution	Avoid
Acetaminophen Short-term use of morphine, fentanyl, oxycodone, hydromorphone, methadone Prednisolone	Ibuprofen Naproxen Lidocaine Sumatriptan	Codeine, Celebrex tramadol TCA SNRIs Anticonvulsants Ergotamine high-dose/long-term use of opioids

Summary of pain medications safe in liver failure

Safe	Caution	Avoid
Gabapentin Pregabalin Fentanyl	Acetaminophen NSAIDs and COX-2 inh Tramadol Morphine Hydromorphone Methadone TCA Venlafaxine	Meperidine Codeine Oxycodone Carbamazepine Duloxetine

Limited data on topiramate and lamotrigine

Summary of pain medications safe in renal dysfunction

Safe	Caution	Avoid
Fentanyl Methadone Carbamazepine Amitriptyline Nortriptyline	Acetaminophen Tramadol Morphine Hydromorphone Oxycodone Topiramate Venlafaxine Gabapentin Pregabalin	NSAIDs and COX-2 inh Meperidine Codeine Duloxetine

Limited data on lamotrigine

Summary of pain medications safe in hemodialysis

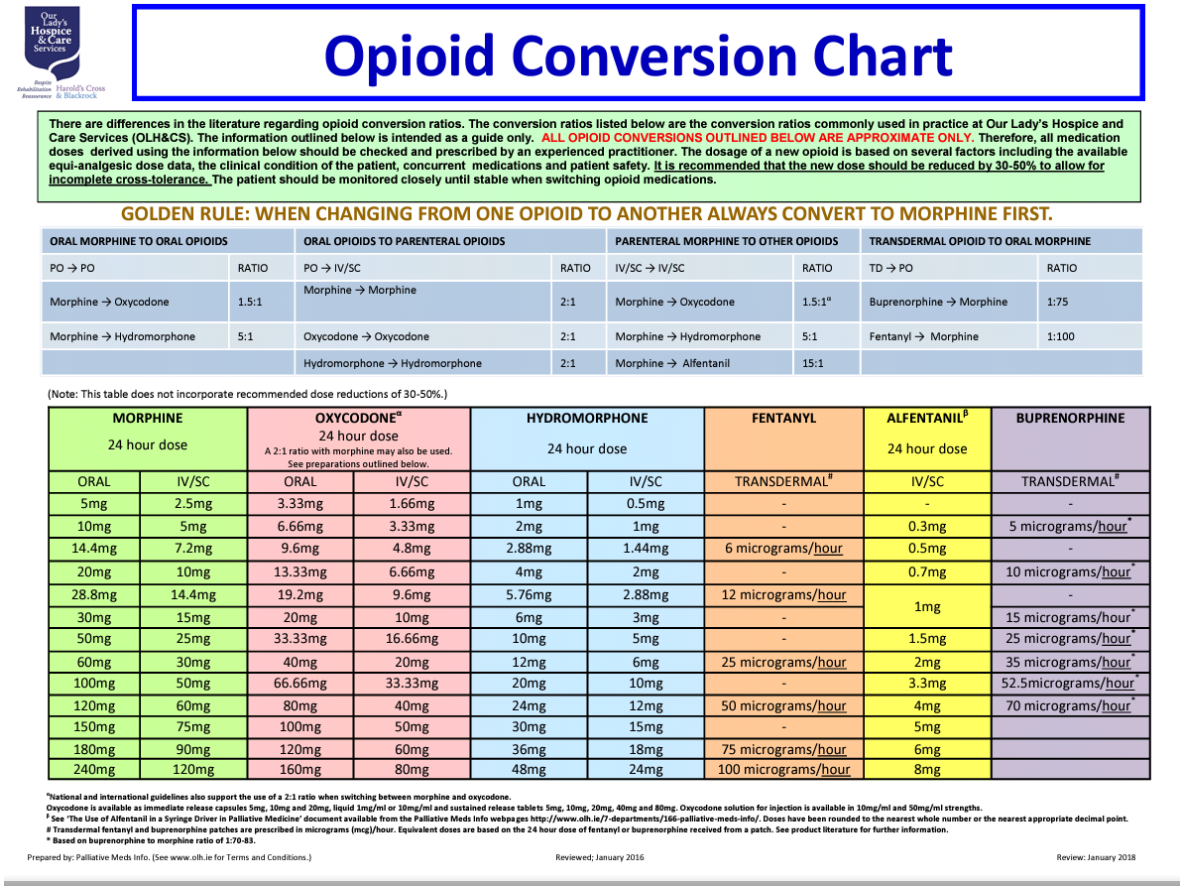
Safe	Caution	Avoid
Fentanyl Methadone Carbamazepine Amitriptyline Nortriptyline	Acetaminophen Tramadol Morphine Hydromorphone Oxycodone Topiramate Venlafaxine Gabapentin Pregabalin	NSAIDs and COX-2 inh Meperidine Codeine Duloxetine

Limited data on TCAs, venlafaxine, duloxetine

Opioid Tapers

Opioid Manager Tool

[Opioid Switching form_Layout 1 (mcmaster.ca)]



Opioid Conversion Chart

There are differences in the literature regarding opioid conversion ratios. The conversion ratios listed below are the conversion ratios commonly used in practice at Our Lady's Hospice and Care Services (OLH&CS). The information outlined below is intended as a guide only. ALL OPIOID CONVERSIONS OUTLINED BELOW ARE APPROXIMATE ONLY. Therefore, all medication doses derived using the information below should be checked and prescribed by an experienced practitioner. The dosage of a new opioid is based on several factors including the available equi-analgesic dose data, the clinical condition of the patient, concurrent medications and patient safety. It is recommended that the new dose should be reduced by 30-50% to allow for incomplete cross-tolerance. The patient should be monitored closely until stable when switching opioid medications.

GOLDEN RULE: WHEN CHANGING FROM ONE OPIOID TO ANOTHER ALWAYS CONVERT TO MORPHINE FIRST.

ORAL MORPHINE TO ORAL OPIOIDS		ORAL OPIOIDS TO PARENTERAL OPIOIDS		PARENTERAL MORPHINE TO OTHER OPIOIDS		TRANSDERMAL OPIOID TO ORAL MORPHINE	
PO → PO	RATIO	PO → IV/SC	RATIO	IV/SC → IV/SC	RATIO	TD → PO	RATIO
Morphine → Oxycodone	1.5:1	Morphine → Morphine	2:1	Morphine → Oxycodone	1.5:1[α]	Buprenorphine → Morphine	1:75
Morphine → Hydromorphone	5:1	Oxycodone → Oxycodone	2:1	Morphine → Hydromorphone	5:1	Fentanyl → Morphine	1:100
		Hydromorphone → Hydromorphone	2:1	Morphine → Alfentanil	15:1		

(Note: This table does not incorporate recommended dose reductions of 30-50%.)

MORPHINE 24 hour dose		OXYCODONE[α] 24 hour dose A 2:1 ratio with morphine may also be used. See preparations outlined below.		HYDROMORPHONE 24 hour dose		FENTANYL	ALFENTANIL[β] 24 hour dose	BUPRENORPHINE
ORAL	IV/SC	ORAL	IV/SC	ORAL	IV/SC	TRANSDERMAL[#]	IV/SC	TRANSDERMAL[#]
5mg	2.5mg	3.33mg	1.66mg	1mg	0.5mg	-	-	-
10mg	5mg	6.66mg	3.33mg	2mg	1mg	-	0.3mg	5 micrograms/hour[*]
14.4mg	7.2mg	9.6mg	4.8mg	2.88mg	1.44mg	6 micrograms/hour	0.5mg	-
20mg	10mg	13.33mg	6.66mg	4mg	2mg	-	0.7mg	10 micrograms/hour[*]
28.8mg	14.4mg	19.2mg	9.6mg	5.76mg	2.88mg	12 micrograms/hour	1mg	-
30mg	15mg	20mg	10mg	6mg	3mg	-		15 micrograms/hour[*]
50mg	25mg	33.33mg	16.66mg	10mg	5mg	-	1.5mg	25 micrograms/hour[*]
60mg	30mg	40mg	20mg	12mg	6mg	25 micrograms/hour	2mg	35 micrograms/hour[*]
100mg	50mg	66.66mg	33.33mg	20mg	10mg	-	3.3mg	52.5micrograms/hour[*]
120mg	60mg	80mg	40mg	24mg	12mg	50 micrograms/hour	4mg	70 micrograms/hour[*]
150mg	75mg	100mg	50mg	30mg	15mg	-	5mg	
180mg	90mg	120mg	60mg	36mg	18mg	75 micrograms/hour	6mg	
240mg	120mg	160mg	80mg	48mg	24mg	100 micrograms/hour	8mg	

[α]National and international guidelines also support the use of a 2:1 ratio when switching between morphine and oxycodone.
Oxycodone is available as immediate release capsules 5mg, 10mg and 20mg, liquid 1mg/ml or 10mg/ml and sustained release tablets 5mg, 10mg, 20mg, 40mg and 80mg. Oxycodone solution for injection is available in 10mg/ml and 50mg/ml strengths.
[β] See 'The Use of Alfentanil in a Syringe Driver in Palliative Medicine' document available from the Palliative Meds Info webpages http://www.olh.ie/7-departments/166-palliative-meds-info/. Doses have been rounded to the nearest whole number or the nearest appropriate decimal point.
Transdermal fentanyl and buprenorphine patches are prescribed in micrograms (mcg)/hour. Equivalent doses are based on the 24 hour dose of fentanyl or buprenorphine received from a patch. See product literature for further information.
* Based on buprenorphine to morphine ratio of 1:70-83.

Prepared by: Palliative Meds Info. (See www.olh.ie for Terms and Conditions.) Reviewed; January 2016 Review: January 2018

Drug	Route	Equianalgesic Dose
Morphine	Parenteral PO	10 mg 30 mg (chronic) 60 mg (acute)
Codeine	PO	200 mg
Fentanyl	Transdermal	12.6 to 25 mcg/hr
Hydrocodone	PO	20-30 mg
Hydromorphone	Parenteral PO	1.3 to 1.5 mg 7.5 mg
Meperidine	Parenteral PO	75 mg 300 mg
Methadone	Parenteral PO	Variable drug titration
Oxycodone	PO	20-30 mg
Oxymorphone	PO Parenteral	10 mg 1 mg
Tramadol	PO	undetermined
Buprenorphine	Parenteral	0.3 mg
Tapentadol	PO	100-150 mg

Opioid Rotation Pearls

- Always convert to MMED first
- Drop the dose of the new opioid by 25-50%
- Breakthrough dose should be between 10-20% of the total daily dose

Opioid Taper Pearls

- Consider the pain diagnosis and ensure you are offering alternatives
- Don’t sweat the small stuff if the patient is on a stable dose below the watchful limit and has improved function with it
- Ask permission to provide information
- Use motivational interviewing
- Provide information on health risks with opioids

CHRONIC ACROSS STUDIES

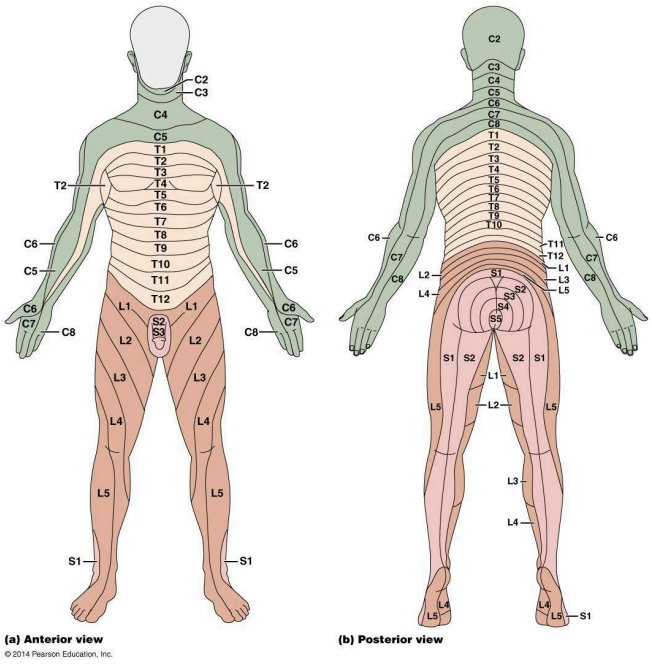
Sleep-disordered breathing (includes both, OSA and CSA)	**42.3 -70% (among MM)** **71%- 100% (among CNCP)**	MM – methadone maintenance CNCP – chronic non-cancer pain
Central sleep apnea (CSA)	**0 - 60% (among MMPs)** **17–80% (among CNCP)**	CPAP is only somewhat helpful
Non-cardiac pulmonary edema	**Rare**	Mostly with overdose
Obstructive sleep apnea (OSA)	**10 –35.2% (among MM)** **20–39% (among CNCP)**	CPAP / BiPAP
Bowel dysfunction	**41-95%**	Laxatives are only somewhat helpful
Narcotic Bowel Syndrome in regular opioid users	**4-6%**	(Farmer, Gallagher et al. 2017)
Hypogonadism	**70-95%**	Depending on the applied criteria
Sexual dysfunction:	**Prévalence (MM)** **52% (95% CI, 0.39–0.65).**	MM vs buprenorphine maintenance OR (4.01, 95% CI, 1.52–10.55, P 0.0049) accros studies
Oligo/amenorrhoea	**23% - 81% oral or intrathecal**	Transdermal buprenorphine is not associated with this particular Toxicity
QT-interval prolongation with methadone	**2.2%**	At the dose used for addiction maintenance
QT-interval prolongation with other opioids	**Not known**	Sporadic case reports only
Dysuria in advanced cancer pain	**~15%**	Prevalence of dysuria in cancer pain without opioids is not known
Adrenal insufficiency in sickle cell	**>19%**	OR (general population) is **2375**, adrenal insufficiency in pain population is likely higher than in general population.
Nephrotoxicity / rhabdomyolysis	**Rare**	Mostly with overdose. Reported in methadone use.
Immune suppression / infection rates in regular users	**Not known** **aOR is 2-4 among older and ICU patients.**	Morphine, fentanyl and codeine, methadone appear the most suppressive. Buprenorphine could be the safest.
New onset depression	**~ 20% after 90 days of use**	Associated with longer duration of use.
Pruritus / opioid-induced itch	**2-10%** **8.5%**	Patients on oral morphine Epidural opiates

Unpublished work: I. Kudrina, S. Markovitz, L. Katrian, Y. Shir

- Go slow
- Get comfortable with suboxone
- Prescribe adjuncts to manage withdrawal symptoms
    - Clonidine 0.1mg po tid prn M:84
    - Loperamide 2mg po prn up to 8x/day M:112
    - Dimenhydrinate 50mg po q6h prn M:112
    - Ibuprofen 600mg po q6h prn M:112
    - Acetaminophen long-acting 650mg po q6h prn M:112
    - Diazepam 5mg po daily prn M:30, dispense max 10 doses/month
    - If dropping long-acting by a significant amount (ex. fentanyl 100mcg to 75mcg), ensure breakthroughs available for an intermediate dose

Neuropathic Pain

DN4 - [20100922NAIH3NeuropathicPainDiagnosticQuestionnaireDN4-1.pdf (casn.ca)]



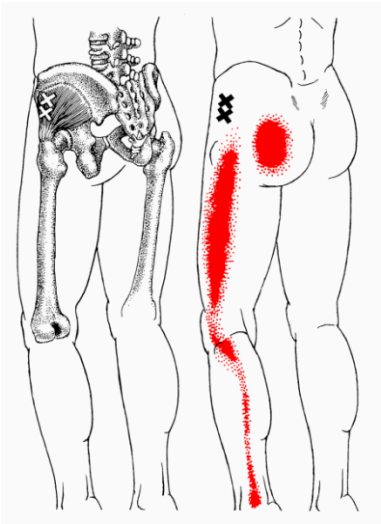
[Pharmacologic management of chronic neuropathic pain (cfp.ca)]

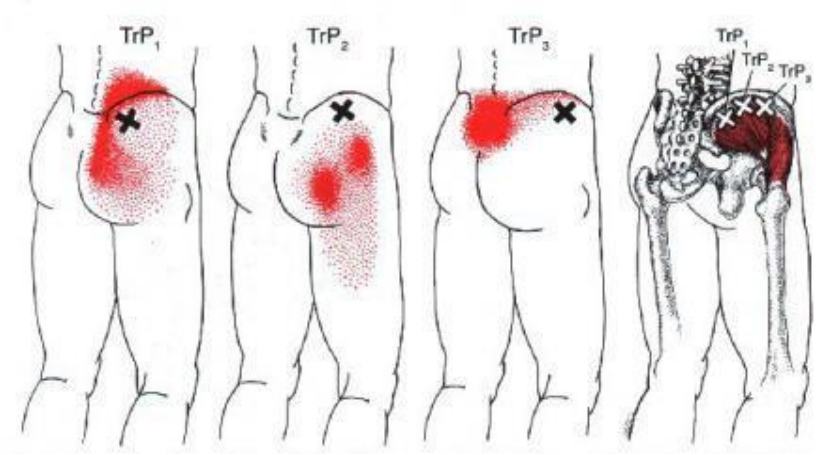
Myofascial Pain

[The Trigger Point & Referred Pain Guide (triggerpoints.net)]

[https://www.ncbi.nlm.nih.gov/books/NBK542196/]

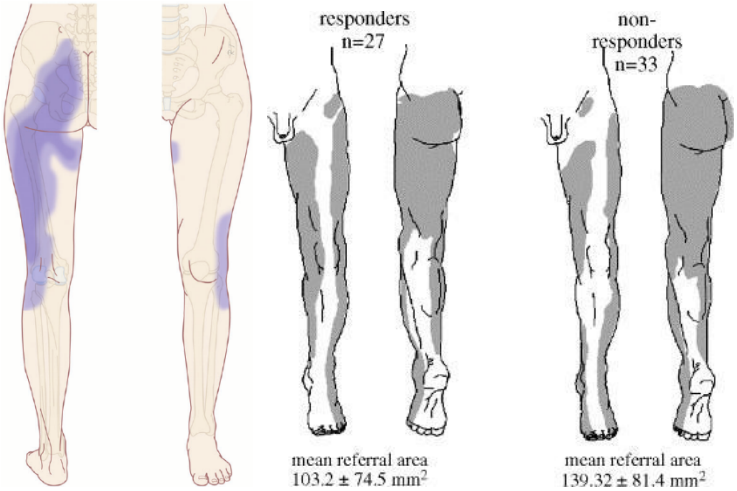
Example Gluteus Minimus Gluteus Maximus



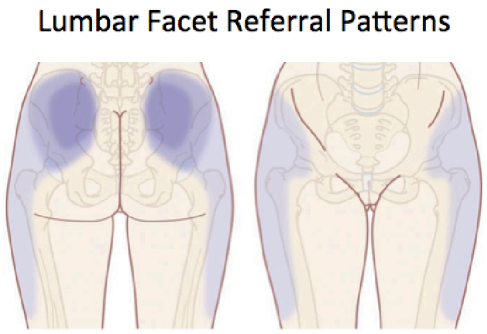


Referred Joint/Ligament Pain

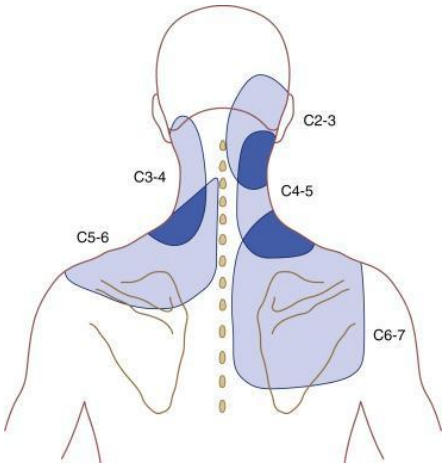
Sacroiliac Joint



Facet Joints



Cervical Facet Joints



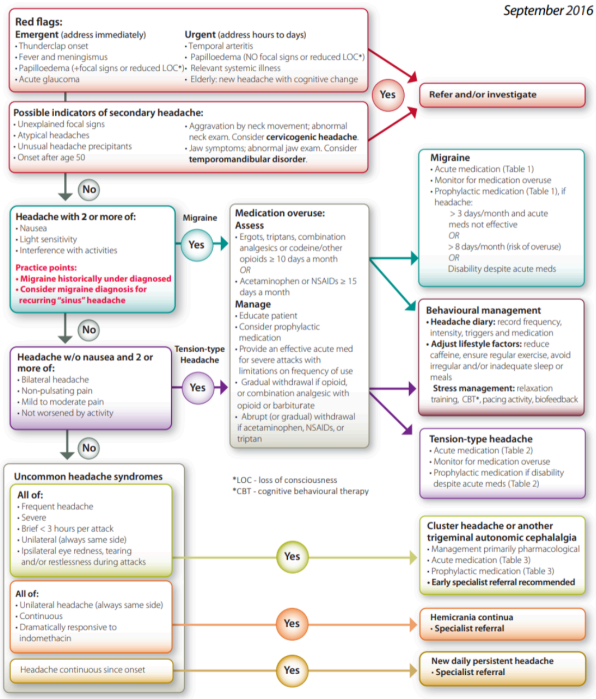
Headaches

Migraines! Migraines! Migraines!

Toward Optimized Practice

Quick Reference: GUIDELINE FOR PRIMARY CARE MANAGEMENT OF HEADACHE IN ADULTS

September 2016



The above recommendations are systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances. They should be used as an adjunct to sound clinical decision making.

IHE INSTITUTE OF HEALTH ECONOMICS ALBERTA CANADA

Toward Optimized Practice

Quick Reference: MEDICATIONS RECOMMENDED FOR HEADACHE MANAGEMENT IN ADULTS

Refer to full guideline for migraine treatment in pregnancy and lactation

Table 1: Migraine

Acute Migraine Medication					
1st line	ibuprofen 400 mg, ASA 1,000 mg, naproxen sodium 550 mg, acetaminophen 1,000 mg, diclofenac 50 mg				
2nd line	Triptans: oral sumatriptan 100 mg, rizatriptan 10 mg, almotriptan 12.5 mg, zolmitriptan 2.5 mg eletriptan 40 mg, frovatriptan 2.5 mg, naratriptan 2.5 mg • Subcutaneous sumatriptan 6 mg if vomiting early in the attack. Consider for attacks resistant to oral triptans. • Oral wafer: rizatriptan 10 mg, zolmitriptan 2.5 mg, if fluid ingestion worsens nausea • Nasal spray: zolmitriptan 5 mg, sumatriptan 20 mg, if nausea Antiemetics: domperidone 10 mg, metoclopramide 10 mg, for nausea				
3rd line	550 mg naproxen sodium in combination with triptan				
4th line	Fixed-dose combination analgesics (with codeine if necessary - not recommended for routine use)				
Prophylactic Migraine Medication		**Starting Dose**	***Titration: Daily Dose Increase**	**Target Dose / Therapeutic Range**	**Notes**
1st line	propranolol	20 mg bid	40 mg/week	40-120 mg bid	
	metoprolol	50 mg bid	50 mg/week	50-100 mg bid	Avoid in asthma
	nadolol	20-40 mg once daily	20 mg/week	80-160 mg daily	
	amitriptyline	10 mg hs	10 mg/week	10-100 mg hs	Consider if depression, anxiety, insomnia or tension-type headache
	nortriptyline	10 mg hs	10 mg week	10-100 mg hs	
2nd line	topiramate	25 mg once daily	25 mg/week	50 mg bid	Consider 1st line if overweight
	candesartan	8 mg once daily	8 mg/week	16 mg once daily	Few side effects; avoid in pregnancy or when pregnancy is planned
	lisinopril	10 mg once daily	10 mg/week	20 mg once daily	More side effects than candesartan; avoid in pregnancy or when pregnancy is planned
Other	divalproex sodium	250 mg once daily	250 mg/week	750-1,500 mg daily, divided bid	Avoid in pregnancy or when pregnancy is planned
	pizotifen	0.5 mg daily	0.5 mg/week	1-2 mg bid	Monitor for somnolence and weight gain
	OnabotulinumtoxinA	155-195 units	No titration needed	155-195 units every 3 months	For chronic migraine only – headache on ≥15 days per month
	flunarizine	5-10 mg hs		10 mg hs	Avoid in depression
	venlafaxine	37.5 mg once daily	37.5 mg/week	150 mg once daily	Consider in migraine with depression and/or anxiety
Over the Counter	magnesium citrate	300 mg bid	No titration needed	300 mg bid	Efficacy may be limited; few side effects
	riboflavin	400 mg daily		400 mg daily	
	co-enzyme Q10	100 mg tid		100 mg tid	

*Titration: Dosage may be increased every two weeks to avoid side effects

- For most drugs, slowly increase to target dose
- Therapeutic trial requires several months
- Expected outcome is reduction, not elimination of attacks
- If target dose not tolerated, try lower dose
- If med effective and tolerated, continue for at least six months
- If several preventive drugs fail, consider specialist referral

Table 2: Tension-Type Headache

Acute Medication	
• ibuprofen 400 mg • ASA 1,000 mg • naproxen sodium 550 mg • acetaminophen 1,000 mg	
Prophylactic Medication	
1st line	amitriptyline 10-100 mg hs *OR* nortriptyline 10-100 mg hs
2nd line	mirtazapine 30 mg hs *OR* venlafaxine 150 mg once daily

Table 3: Cluster Headache (consider early specialist referral)

Acute Medication	
• subcutaneous sumatriptan 6 mg • intranasal zolmitriptan 5 mg or sumitriptan 20 mg *OR* 100% oxygen at 12 litres/minute for 15 minutes through non-rebreathing mask	
***Prophylactic Medication**	
1st line	verapamil 240-480 mg per day (higher doses may be required)
2nd line	lithium 900-1,200 mg per day
Other	topiramate 100-200 mg per day *OR* melatonin up to 10 mg hs

***Note**: If more than two attacks per day, consider transitional therapy while verapamil is built up (e.g., prednisone 60 mg for five days, then reduced by 10 mg every two days until discontinued, or occipital nerve blockage with steroids by trained physicians).

Abbreviations: **hs** – at bedtime; **bid** – twice a day; **tid** – three times a day

September 2016

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