

# Migraine Workshop & PREEMPT Protocol Hands-on

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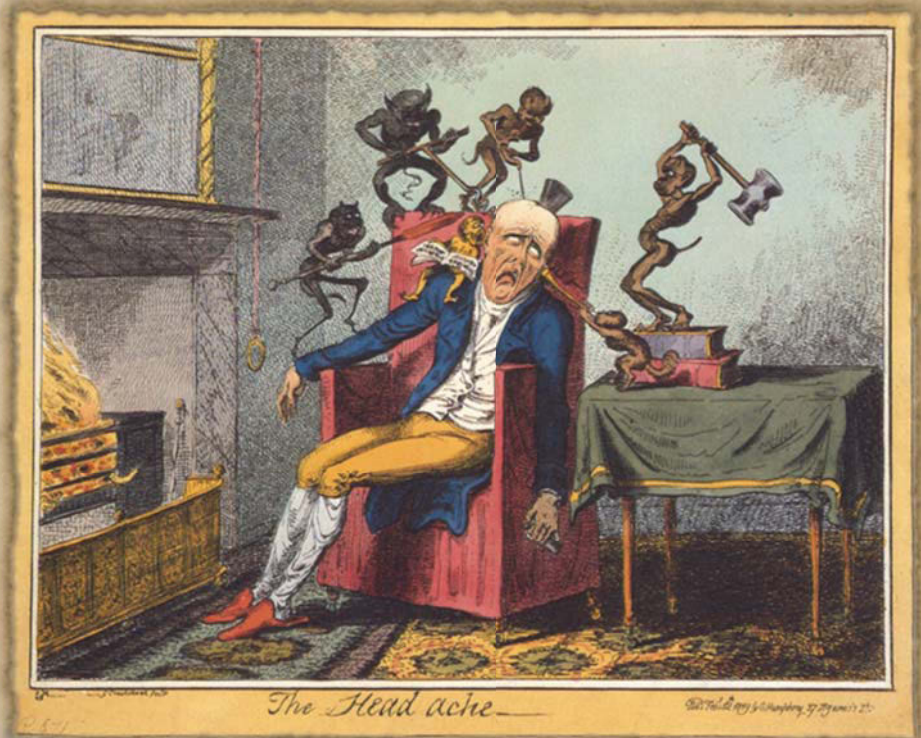
Division Pain Medicine





# Objectives

- ◆ 1) Identify diagnostic criteria for diagnosis of migraine headache.
- ◆ 2) State pharmacological and non-pharmacological options for treatment.
- ◆ 3) Define the possible risks, benefits, side effects of using onabotulinumtoxin A (Botox™) trigger point injections.
- ◆ 4) Perform PREEMPT protocol for onabotulinumtoxin A (Botox™) trigger point injections.
- ◆ 5) Describe the necessary documentation for billing of a PREEMPT procedure







Nothing To Disclose

# International Classification of Headache Disorders

## ICHD-III-β

### International Classification of Headache Disorders

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#### I- Primary

1. Migraine
2. Tension-type headache
3. Trigeminal autonomic cephalalgias
  - 3.1 Cluster headache
  - 3.2 Paroxysmal hemicrania
  - 3.3 SUNCT/SUNA
  - 3.4 *Hemicrania continua*
4. Other Primary Headaches
  - 4.1 Cough headache
  - 4.2 Exercise Headache
  - 4.3 Sexual activity headache
  - 4.4 Thunderclap headache
  - 4.5 *Cold stimulus: external/ingestion*
  - 4.6 *External pressure: compression/traction*
  - 4.7 Stabbing Headache
  - 4.8
  - 4.9
  - 4.10 New Daily Persistent Headache

#### II-Secondary

5. Trauma or injury to the head
6. Cranial or cervical vascular
7. Intracranial non-vascular
8. Substances
9. Infection
10. Homoeostasis
11. Disorder head, neck, eyes...
12. Psychiatric

#### III-Cranial neuralgias/facial pain

- trigeminal neuralgia
- trigeminal neuropathy
- glossopharyngeal neuralgia
- nervus intermedius neuralgia
- occipital neuralgia
- Tolosa-Hunt
- Burning Mouth Syndrome

# International Classification of Headache Disorders

## ICHD-III-β

### I. Primary Headaches

- Migraine
- Tension type headache
- Trigeminal autonomic cephalalgias
  - Cluster headache
  - Paroxysmal hemicrania
  - SUNCT/SUNA
- Other Primary Headaches
  - 4.1-4.10

### II. Secondary Headaches

### III. Cranial Neuralgias/ Facial Pain



# International Classification of Headache Disorders ICHD-III- $\beta$

## I. Primary Headaches

~ Migraine

# Migraine Defined

- ◆ Headache frequency >15 days for >3 months.
- ◆ Lifetime history of >5 attacks migraine.
- ◆ On >8 days per month for 3 months, one of the following:
  - Typical migraine pain characteristics & nausea/ sensitivity
  - Aura
  - Attacks considered migraine by patient and relieved by triptans/ ergots.



## Diagnostic criteria for migraine without aura:

- A. At least five attacks fulfilling criteria B-D
- B. Headache attacks lasting 4-72 hours [when untreated in adults]
- C. Headache has at least two of the following characteristics:
  - unilateral location
  - pulsating quality
  - moderate or severe pain intensity
  - aggravation by or causing avoidance of routine physical activity
- D. During the headache, at least one of the following [is present]:
  - Nausea and/or vomiting
  - Photophobia and phonophobia
- E. Not attributable to another disorder

(International Headache Society)



# Migraine defined

## **Chronic Migraine ICHD-II-R**

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- A. Headache frequency  $\geq 15$  days for  $\geq 3$  months
- B. Patient with at  $\geq 5$  attacks of migraine without aura (MWoA) in the past
- C. On  $\geq 8$  days per month for three months has
  - 1. typical MWoA
  - 2. attacks treated and relieved by triptans/ergots
- D. Not attributed to another disorder, particularly no medication overuse

(Olesen *et al.*, Cephalalgia 2006;26:742)



# Migraine defined

## **Chronic Migraine ICHD-III $\beta$**

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- A. Headache frequency  $\geq 15$  days for  $\geq 3$  months
- B. Patient with at  $\geq 5$  attacks of migraine with aura (MwA) or without aura (MwoA) in the past
- C. On  $\geq 8$  days per month for three months one of:
  - 1. MwoA: C. pain characteristics AND D. nausea/sensitivity
  - 2. MwA: typical aura (B & C)
  - 3. Attacks considered migraine by patient and relieved by triptans/ergots
- D. Not better accounted for by another ICHD-III diagnosis



# Pathophysiology

Migraine is an inherited central nervous system disorder.

Neurogenic inflammation eventually leads to the pain associated with a migraine.

Complex neuro-vascular contributing factors

- cortical spreading depression
- reduction in brain electrical activity and decrease in blood flow.
- release of  $K^+$  and  $H^+$  activates sensory fibers
- activation of trigeminal and brain stem neurons
- precipitation of vasodilation



# Pathophysiology

Migraineurs have hyper excitable brains.

Migraine is progressive, during an attack:

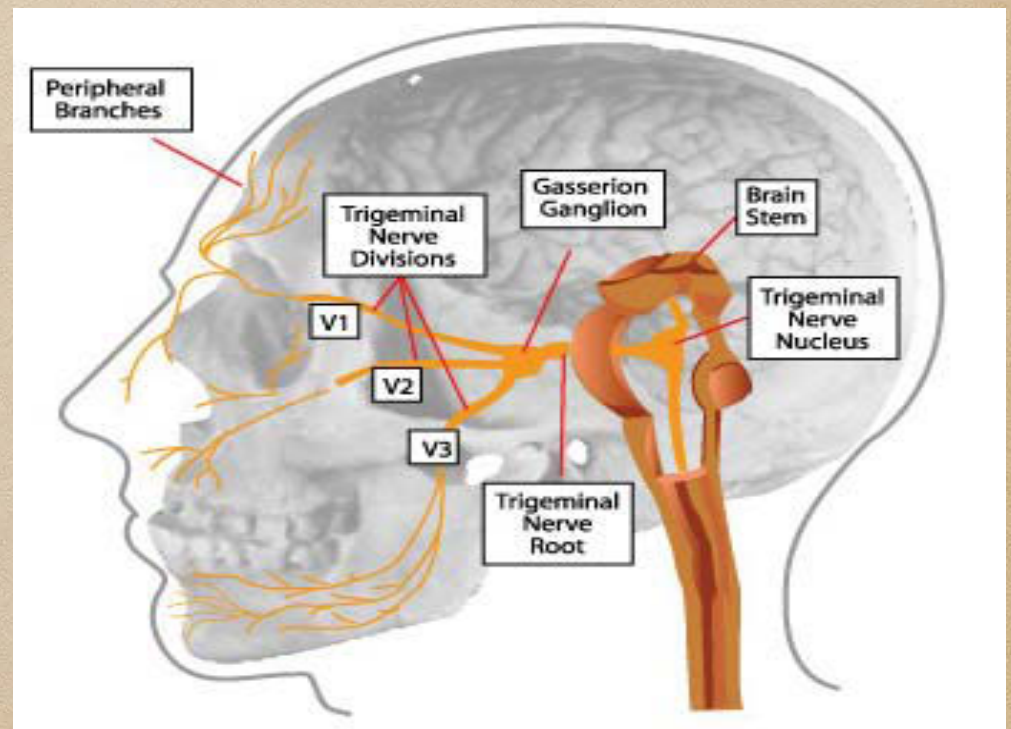
- central sensitization
- It has been hypothesized that migraineurs have an altered peripheral glutamate homeostasis (substance P, CGRP, and neurokinin A, are released) triggering neurogenic inflammation, which eventually leads to the pain of and persistent neuronal hyperexcitability that becomes heightened during migraine attacks.

(Ramadan, 2003)



# *Migraine Pathogenesis*

Unrestrained firing of the trigeminal nerve and upper cervical roots, synapse on the nucleus caudalis, causing wind-up, leads to central sensitization (allodynia)





# Prevalence

It is estimated that 11% (303 million) of the global population.

The American Migraine Study II (AMS II) estimated that 28 million Americans suffer from migraine—approximately 18% of women and 7% of men (Lipton et al, 2001a).

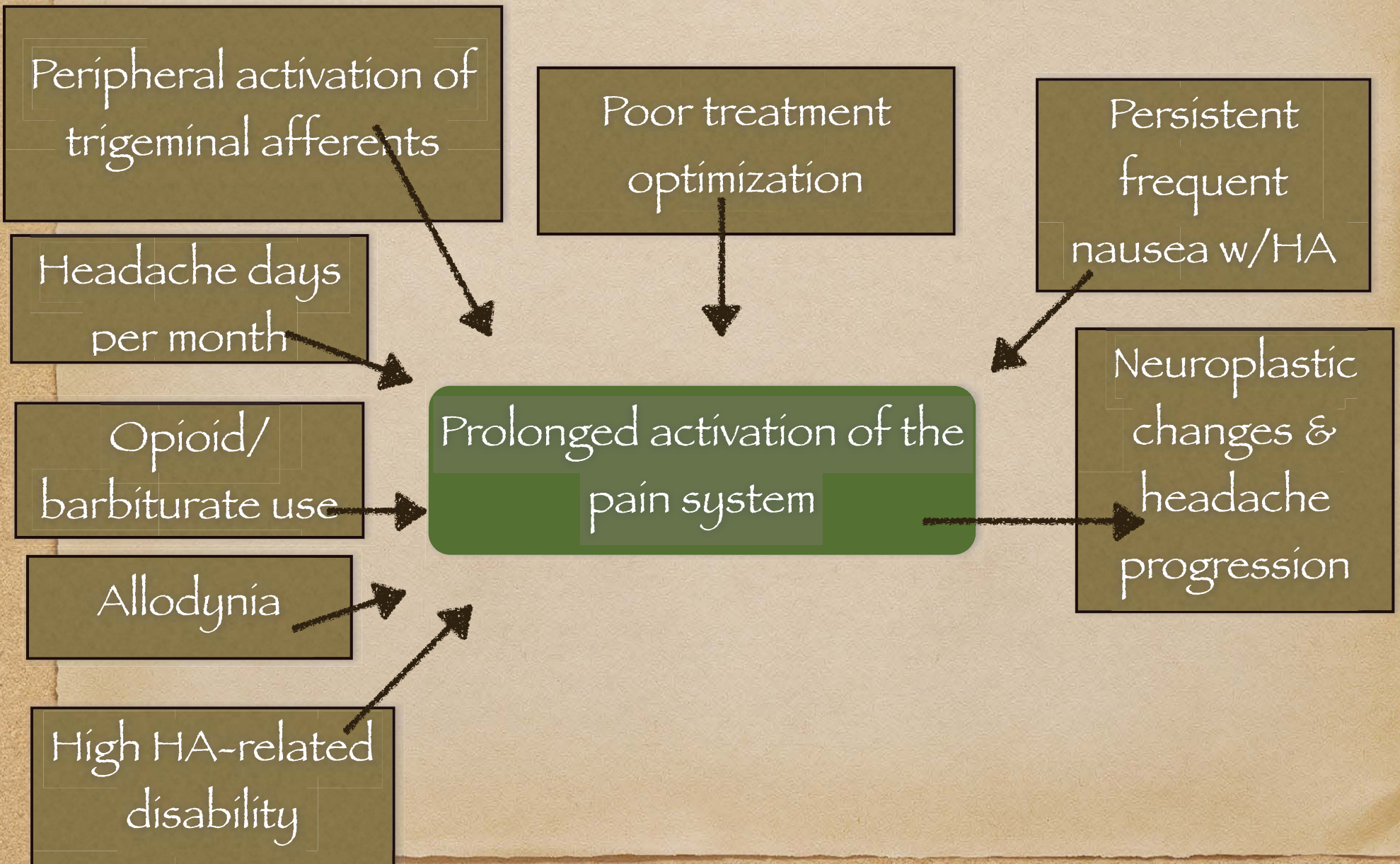


# Do risk factors lead to migraine progression?

- ◆ Prolonged and intense activation of the trigeminal system
- ◆ Headache days per month
- ◆ High HA-related disability
- ◆ Peripheral activation of trigeminal afferents
- ◆ Poor treatment optimization
- ◆ Neuroplastic changes and headache progression
- ◆ Opioid/barbiturate use
- ◆ Prolonged activation of the pain system
- ◆ Allodynia
- ◆ Persistent frequent nausea w/ HA



Hypothesis: Prolonged & intense activation of the trigeminal system may lead to headache progression:





# The prevalence, impact, and treatment of migraine in the U.S.

## A review of statistics from national surveillance studies

- ◆ Chronic migraine remains a largely under-diagnosed and under-treated medical condition.
- ◆ While the vast majority of individuals with chronic migraine (87.6%) had sought care from a healthcare professional, just 20.2% of those with chronic migraine received a diagnosis of chronic migraine
- ◆ A third of those with chronic migraine (33.3%) were currently using preventive medications.



# The prevalence, impact, and treatment of migraine in the U.S.

## A review of statistics from national surveillance studies:

- One in five chronic migraine sufferers cannot work due to the severity of their condition. Over a 3-month period, 8.2% of the chronic migraineurs missed at least 5 days of work and school. Further, slightly more than a third (33.8%) of these sufferers reported at least 5 days of significant reduction in productivity during the same time frame.
- Chronic migraine severely impacts one's ability to lead a productive life.
  - More than half of those with chronic migraine (57.4%) missed at least 5 days of household work, and 58.1% reported a reduction in productivity in household work for at least 5 days within the last three months.
  - Chronic migraineurs also reported missing out on at least 5 days of family activities within the three month period.



# Cost of Migraine

- ◆ The significant impact of migraine and other headache disorders—on pain, disability, impaired social function, quality of life, and general health—imposes a large burden on the utilization of healthcare services, society, and the affected individuals (Hu et al, 1999).
- ◆ Migraine sufferers use 2.5 times more prescription drugs than nonmigraine sufferers (Clouse and Osterhaus, 1994), at a cost of \$2.7 billion annually in the US (Ferrari, 1998).
- ◆ The reported cost of ED visits for migraine-related treatment in the US ranges from \$646 million to \$1.94 billion annually (Barron et al, 2003).
- ◆ The direct medical costs associated with migraine have been estimated at \$9.5 billion (Ferrari, 1998).
- ◆ One managed healthcare study found patients with migraine generated nearly twice as many medical claims as those without (Clouse and Osterhaus, 1994).



# Treatments/Management

## Medications

- Abortive
- Preventative
- Infusions (ketamine, lidocaine, dihydroergotamine)
- Steroids
- Oxygen therapy

## Interventions

Nerve blocks , Trigger Point injections, Implantables

## Complementary

Cognitive/ Behavioral strategies, Manual therapies, Nutraceuticals





# Migraine Treatment

## Prophylaxis

Beta-blockers

Calcium channel  
blockers

Tricyclic antidepressants

Anticonvulsants

## Acute episodes

Non-specific effects

NSAIDs

Antiemetics

Specific effects

Triptans

Dihydroergotamine

Onabotulinumtoxin A



# Abortive medications

- Triptans: effective for mild – severe acute migraine. Patients treated within the first 90 minutes are less likely to experience a recurrence than patients treated after 2 hours. Give at the first sign of patients susceptible to cutaneous allodynia.
- Mechanism: 5HT<sub>1</sub> agonist (5HT<sub>1b-d</sub>)
  - Agonism of 5-HT<sub>1</sub> heteroreceptors on trigeminal nerve blocking neurogenic inflammation and pain transmission.
  - Direct inhibitory effects on pain transmission in the trigeminal nucleus caudalis.
  - Selective serotonin receptor agonist.
  - vasoconstriction



# Triptans

Triptan	Formulation	Doses	Max daily	Notes
Sumatriptan (Imitrex)	Tablets nasal spray SC injection Suppositories	25, 50, 100mg 5, 20mg 4mg, 6mg 25mg	200mg 40mg 12mg 50mg	Maximum recommended monthly dose: 18 tablets (50 mg) or an equal amount
Zolmitriptan (Zomig)	Tablets orally dissolving (ZMT) nasal spray	2.5, 5mg 2.5, 5mg	10mg 10mg	
Rizatriptan (Maxalt)	Tablets orally dissolving (MLT)	5, 10mg 5mg, 10mg	30mg 30mg	Propranolol increases serum concentration of rizatriptan
Naratriptan (Amerge)	Tablet	1, 2.5mg	5mg	Only triptan not CI with MAO inhibitors, slower onset
Almotriptan (Axert)	Tablet (12.5mg)	12.5mg	25mg	
Frovatriptan (Frova)	Tablet (2.5mg)	12.5mg	25mg	Longest half life: 25 hours, slower onset
Eletriptan (Relpax)	Tablet (40mg)	20, 40mg	80mg	



# Other abortives

**Ergots:** DHE. Recurrence of HA is lower, but efficacy is also lower than 100mg of Sumatriptan. CI: hepatic or renal failure, HTN, sepsis, coronary or peripheral vascular dz., recent triptan use. ( $\alpha$ -adrenergic and serotonin agonist).

**NSAIDs:** Naproxen sodium, ASA, diclofenac, ibuprofen in non disabling migraine. AAC (acetaminophen, aspirin, caffeine) is also effective and has shown superiority over monotherapy.

**Butalbital:** high rate of habituation, lack of evidence of efficacy, off market in many countries.

**Anti-emetics:** Dopamine antagonists such as IV metaclopramide, prochlorperazine, or chlorpromazine. Effective in many studies in patients without emesis as delayed gastric emptying and stasis associated with migraines can lead to poor oral absorption of medications. Orally, few studies to demonstrate effectiveness as monotherapy, but may be used adjunctively. Serotonin receptor antagonist (ondanstron, granisteron) have not been shown to be effective.

**Opiates:** Although there is evidence that opiates are effective for acute migraine, they should be used as rescue therapy only due to high rate of abuse, dependence and concern that they may worsen central sensitization.



# Prophylactic medications

Beta Blockers - Metoprolol, Propranolol, Timolol - The most studied prophylactic with over 70 controlled trials.

- Propranolol effective at daily dose 120 -240mg, 50% effective in producing 50% reduction in attack frequency.
- Metoprolol similar, nadolol, atenolol likely beneficial as well, with fewer side effects.
- S/E: drowsiness, fatigue, depression

Anti-depressants - Amitriptyline, fluoxetine, venlafaxine. Total of 17 controlled studies, the majority using amitriptyline.

- TCAs: proven efficacy in migraine, amitriptyline has been more frequently studied, nortriptyline, fewer side effects. SSRI: Fluoxetine better than placebo in 1 out of 2 studies. 2 studies on Venlafaxine, did better than placebo.
- S/E for TCA: sedation (if too much switch to a secondary amine - nortriptyline, desipramine) dry mouth, metallic taste, constipation, tachycardia, palpitations, urinary retention, blurred vision, carbohydrate cravings leading to weight gain, orthostatic hypotension.
- Dosage: Amitriptyline: 10-400mg QHS. Nortriptyline: 10-150mg QHS, if insomnia – give in am.



# Prophylaxis Cont:

## Anticonvulsants:

- Gabapentin: 1 RCT showed GBT 1800-2400mg superior to placebo.
- VPA: 6 RCTs studies have shown good support for efficacy. Target level 50-100 mg/ml. S/E: nausea, vomiting, hyperandrogenism, teratogen, fatal hepatotoxicity, pancreatitis
- Topiramate: 2 large multi-center, double-blind, placebo controlled trials. Dose 50-200mg. S/Es: paresthesias, fatigue, confusion, weight loss, insomnia, renal calculi, acute myopia secondary to secondary angle closure glaucoma, oligohidrosis

## Herbs: MIG-99, Butterbur, Riboflavin

- Feverfew: not efficacious in RCT, but MIG-99 (extract of feverfew) shown to be effective at 6.25mg tid. S/E: oral inflammation, oral ulcers.
- Butterbur: 75mg bid *Petasites* extract was found to be significantly more effective than placebo in reducing headache frequency in a randomized, double-blind placebo controlled trial. S/E: burping.
- Riboflavin: 400mg in RCT was found to be superior to placebo in reducing headache frequency and severity. S/E: diarrhea, polyuria.



# Interventions

- ◆ Nerve Blocks

- ◆ Occipital
- ◆ Cervical spine
- ◆ Cervical medial branch
- ◆ Peripheral nerve blocks

- ◆ Trigger Point Injections

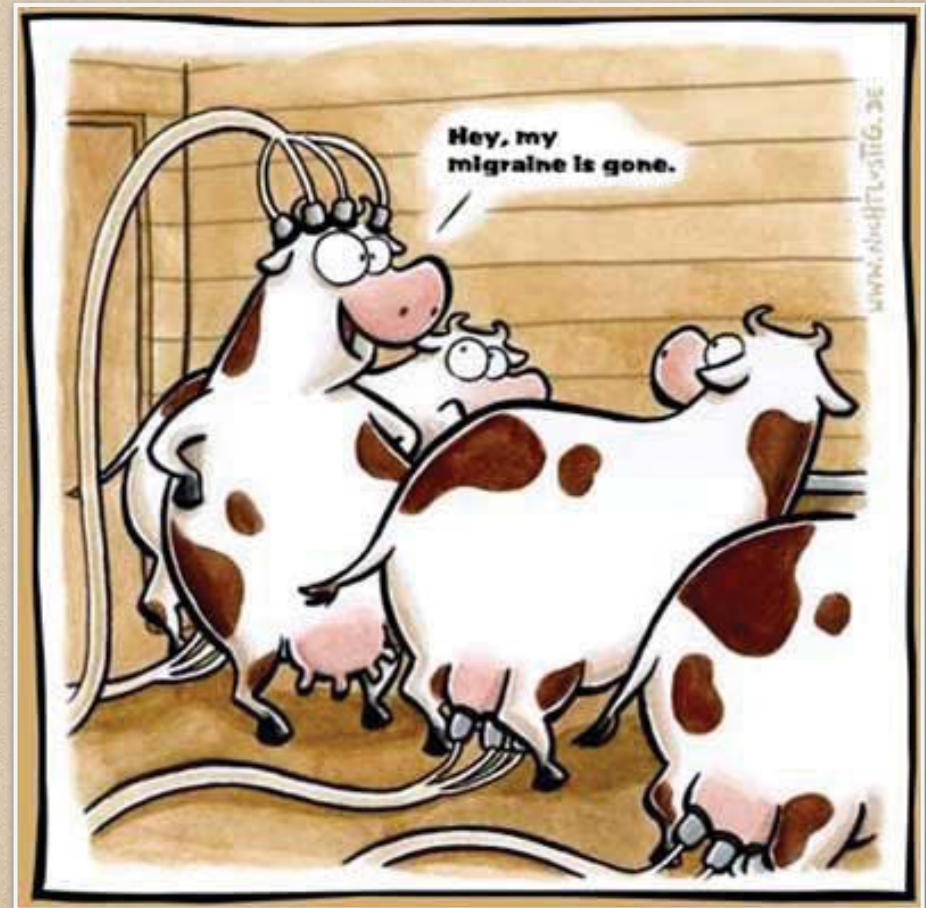
- ◆ Botox via PREEMPT
- ◆ Other myofascial TP injections
- ◆ IT infusion pump

- ◆ Infusions:

Dihydroergotamine, Lidocaine, Magnesium, Ketamine

- ◆ Implantable Devices

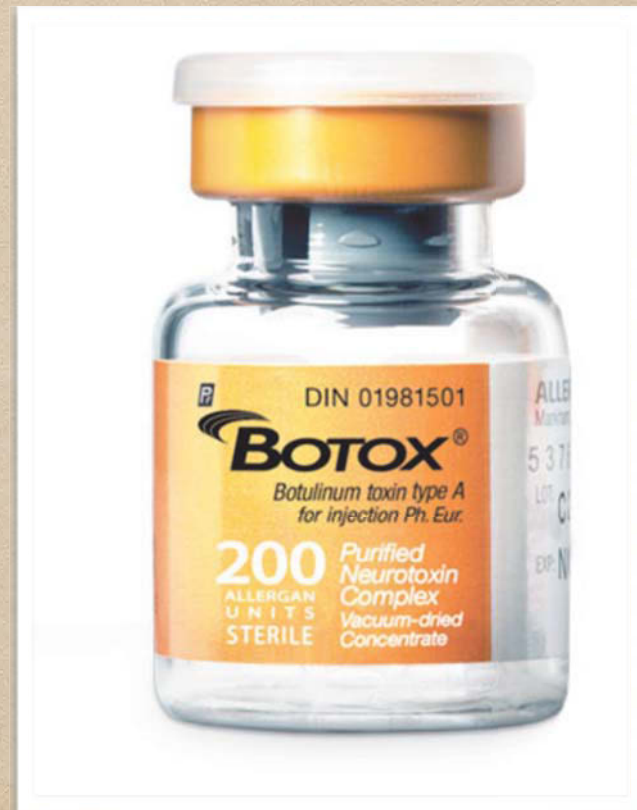
- ◆ Occipital nerve stimulator
- ◆ Deep brain stimulator





# Onabotulinumtoxin A (Botox™)

## Trigger point injections





# Whoever envisioned that Botox would work for migraines?

- ◆ Dr. William Binder, in 1992, injected botulinum toxin A into a patient's forehead for the treatment of wrinkles.
- ◆ Several months later the patient reported lessening of migraine symptoms.



## History of Botox: Clostridium botulinum (Purified Neurotoxin Complex)

- ◆ 1895 - C. Botulinum first identified - 7 serotypes (A, B, C, D, E, F, G)
- ◆ 1920 - Type "A" first isolated
- ◆ 1950s - Type "A" shown to block release of Acetylcholine
- ◆ 1973 - Therapeutic potential to relax extraocular muscles investigated by Dr. Alan Scott in San Francisco, CA.
- ◆ 1978 FDA approves type A (Oculinum) for human testing.
- ◆ 1989 - Allergan leads Oculinum through FDA testing & receives approval for Strabismus & Blepharospasm.



## History of Botox: Clostridium botulinum (Purified Neurotoxin Complex)

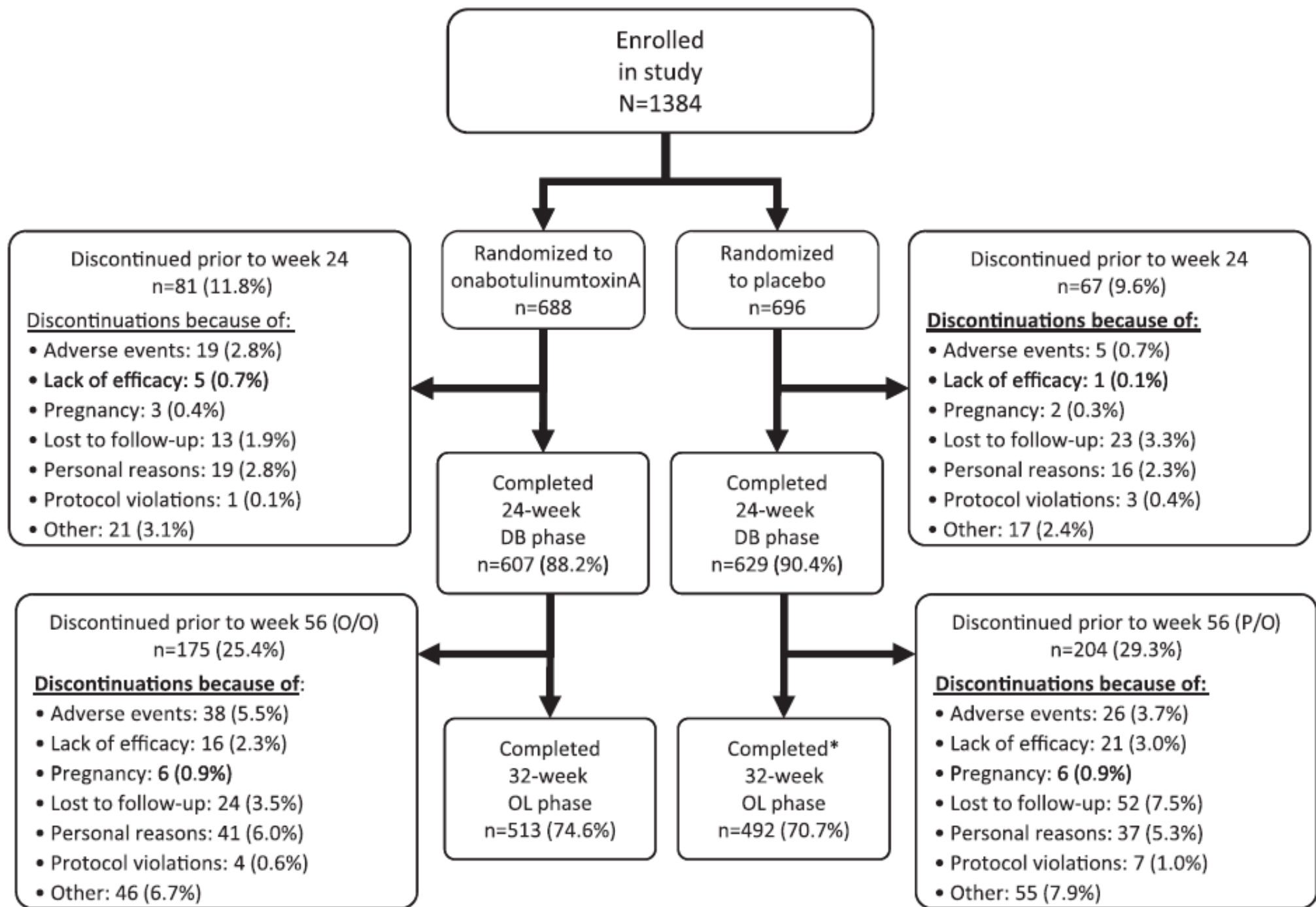
- ◆ 1991 - Allergan acquires rights to Oculinum - name changed to Botox.
- ◆ 2000 - FDA approves Botox for treatment of Cervical Dystonia.
- ◆ 2002 - FDA approves Botox Cosmetic for Glabellar Lines
- ◆ 2004 - FDA approves Botox for Axillary Hyperhidrosis
- ◆ 2010 - FDA approves for Migraine Headaches



# The PREEMPT trial

- ◆ PREEMPT (Phase III Research Evaluating Migraine Prophylaxis Therapy) consisted of two pivotal trials that resulted in Food and Drug Administration licensure of Botox as the only approved treatment for chronic migraine, an often-disabling disorder that affects 1%-2% of the U.S. adult population.
- ◆ PREEMPT involved 1,384 adults with chronic migraine as defined by the ICHD-2 – basically, an average of at least 15 days of headache per month – at 122 U.S. and European sites. Participants were randomized double-blind to Botox or placebo injections at baseline, 12, and 24 weeks. Then the placebo group was crossed over to open-label Botox, which all subjects received at weeks 36 and 48.
- ◆ At the study's end, roughly 70% of patients had achieved a 50% or greater reduction in headache days per month, compared with baseline.

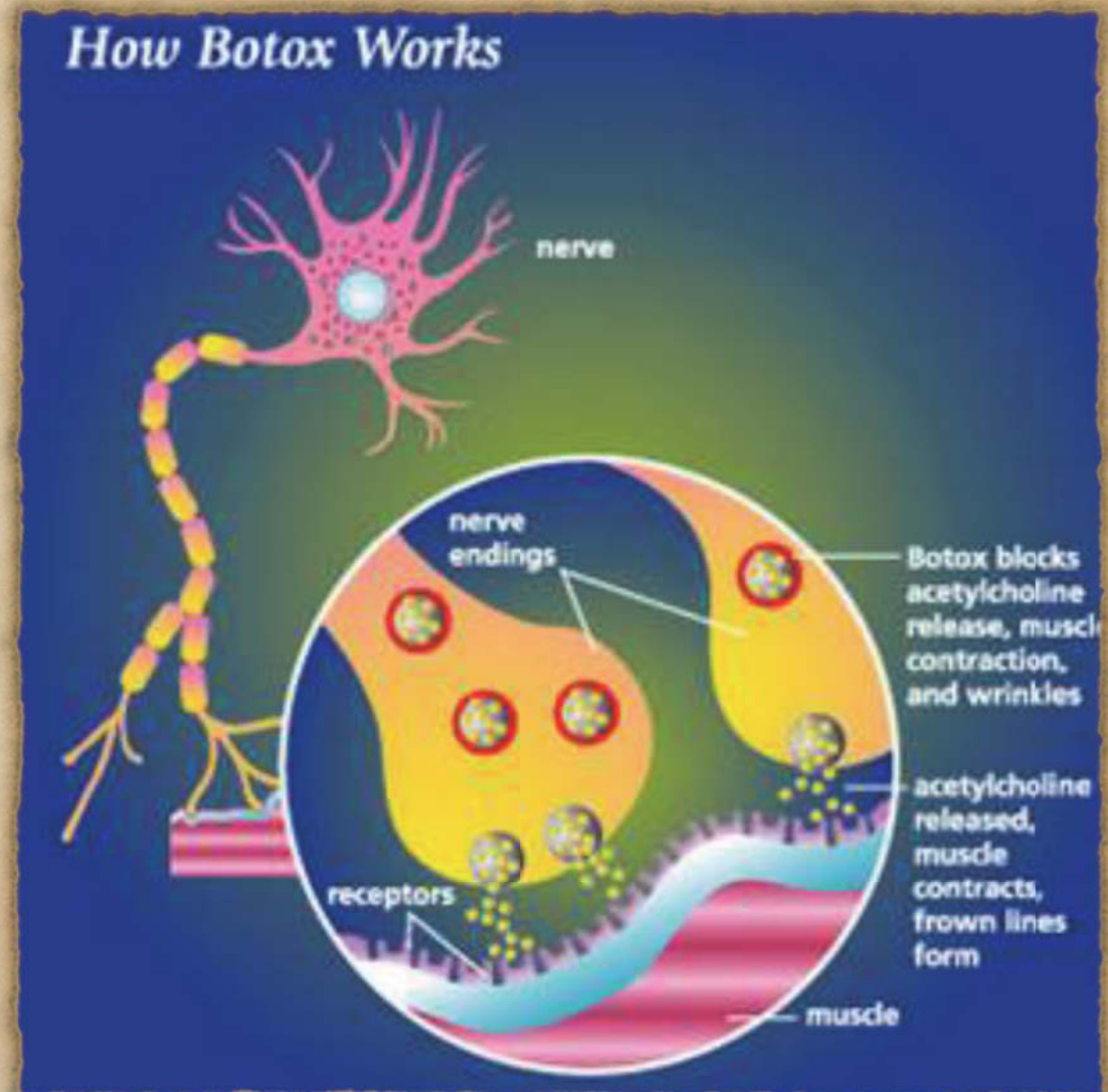






Botox blocks acetylcholine release at the neuromuscular junction, reducing the ability of muscles to contract.

Effects last 4-6 months, and may take up to 2 weeks to be fully effective.





A national leader in headache research and treatment, she was the lead investigator for the PREEMPT1 trial which led to approval for BOTOX® for chronic migraine.





# Documentation

- ◆ > 15 headache days per month with headache lasting 4 hrs a day or longer.
- ◆ At least half of headache days are migraine.
- ◆ Document all current and previous acute and preventative medications used ( some plans require failure of at least 2 classes of oral preventatives).
- ◆ Outline medical necessity.



# Documentation

## Documentation when ordering for first time

"Based on the diagnosis of Chronic Migraine (history of episodic migraine, now with headache more than fifteen days per month for more than 6 months, more than eight of which are lasting greater than four hours), and the failure of more than two preventive medications, either antiepileptics, antidepressants, or antihypertensives, to control those headaches, I recommended treatment with Onobotulinumtoxin A per the PREEMPT protocol."



# Sample of patient consent

Discussed the risks, benefits and alternatives.

Specifically, we discussed the risks of bleeding, infection and nerve injury with worsened pain and function. Specifically, we discussed the most frequently reported adverse reactions following injection of BOTOX for chronic migraine include neck pain (9%), headache (5%), eyelid ptosis (4%), migraine (4%), muscular weakness (4%), musculoskeletal stiffness (4%), bronchitis (3%), injection-site pain (3%), musculoskeletal pain (3%), myalgia (3%), facial paresis (2%), hypertension (2%), and muscle spasms (2%).

The patient verbalized an understanding of these risks and the symptoms and the potentially catastrophic consequences of this occurrence.



### **BOTOX (Botulinum A Toxin) INFORMED CONSENT**

I, \_\_\_\_\_, understand that I will be injected with Botulinum A Toxin (Botox) in the area of the glabella muscles to paralyze these muscles temporarily or in the forehead or crows feet around the lateral area of the eyes.

Botulinum A Toxin (Botox) injection has been FDA approved for use in the cosmetic treatment for glabellar frown lines only – the wrinkles between the eyebrows.

Injection of Botox into the small muscles between the brows causes those specific muscles to halt their function (be paralyzed), thereby improving the appearance of the wrinkles. I understand the goal is to decrease the wrinkles in the treated area. This paralysis is temporary, and re-injection is necessary within three to four months. It has been explained to me that other temporary and more permanent treatments are available.

The possible side effects of Botox include but are not limited to:

1. **Risks:** I understand there is a risk of swelling, rash, headache, local numbness, pain at the injection site, bruising, respiratory problems, and allergic reaction.
2. **Infection:** Infections can occur which in most cases are easily treatable but in rare cases a permanent scarring in the area can occur.
3. Most people have lightly swollen pinkish bumps where the injections went in, for a couple of hours or even several days.
4. Although many people with chronic headaches or migraines often get relief from Botox, a small percent of patients get headaches following treatment with Botox, for the first day. In a very small percentage of patients these headaches can persist for several days or weeks.
5. Local numbness, rash, pain at the injection site, flu like symptoms with mild fever, back pain.
6. Respiratory problems such as bronchitis or sinusitis, nausea, dizziness, and tightness or irritation of the skin.
7. Bruising is possible anytime you inject a needle into the skin. This bruising can last for several hours, days, weeks, months and in rare cases the effect of bruising could be permanent.
8. While local weakness of the injected muscles is representative of the expected pharmacological action of Botox, weakness of adjacent muscles may occur as a result of the spread of the toxin.
9. **Treatments:** I understand more than one injection may be needed to achieve a satisfactory result.



# Possible Complications

neck pain (9%), headache (5%), eyelid ptosis (4%), migraine (4%), muscular weakness (4%), musculoskeletal stiffness (4%), bronchitis (3%), injection-site pain (3%), musculoskeletal pain (3%), myalgia (3%), facial paresis (2%), hypertension (2%), and muscle spasms (2%)



# Possible Complications

## PREEMPT: OnabotA Tolerability in Chronic Migraine

Only neck pain and muscular weakness were reported in  $\geq 5\%$  of patients

	Onabotulinumtoxi nA (n=687)	Placebo (n=692)
Total treatment-related AEs	29.4	12.7
Neck pain	6.7	2.2
Muscular weakness	5.5	0.3
Eyelid ptosis	3.3	0.3
Injection-site pain	3.2	2.0
Headache	2.9	1.6
Myalgia	2.6	0.3
Musculoskeletal stiffness	2.3	0.7
Musculoskeletal pain	2.2	0.7



# Risks

- ◆ Medication reaction/anaphylaxis
- ◆ Bleeding
- ◆ Infection
- ◆ Nerve injury with worsened pain and function.



# Benefits

- ◆ Indication: Prophylaxis of HA in adult patients with chronic migraine (>15 days per month with HA lasting 4hrs a day or longer.
- ◆ Reduction in headache days
- ◆ Reduction in intensity of pain
- ◆ Improvement in functionality
- ◆ Less reliant on medication



# Alternatives

- ◆ Medications
- ◆ Behavioral management
- ◆ Injection therapies



# Documentation

## Consent and documentation

DATE OF PROCEDURE: \_\_\_\_\_

PROCEDURE: Chemodenervation with Botulinum toxin per PREEMPT

IDENTIFICATION: @PATIENTNAME@ is a @AGE@ year old @SEX@ seen in our Pain Clinic and has a past medical history of chronic migraine. (for repeat procedures, ..."botox has consistently reduced her HAs to <7 days per month. ")

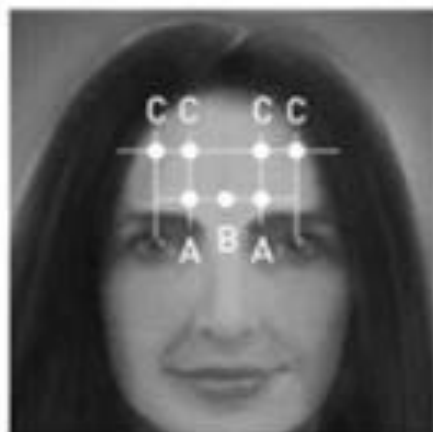
The patient was identified and informed consent was reviewed with the patient, and we discussed the risks, benefits and alternatives. Specifically, we discussed the risks of bleeding, infection and nerve injury with worsened pain and function. Specifically, we discussed the most frequently reported adverse reactions following injection of BOTOX for chronic migraine include neck pain (9%), headache (5%), eyelid ptosis (4%), migraine (4%), muscular weakness (4%), musculoskeletal stiffness (4%), bronchitis (3%), injection-site pain (3%), musculoskeletal pain (3%), myalgia (3%), facial paresis (2%), hypertension (2%), and muscle spasms (2%). The patient verbalized an understanding of these risks and the symptoms and the potentially catastrophic consequences of this occurrence. The patient verbalized an understanding that if she should begin to have these symptoms that she should immediately go to the nearest emergency room for evaluation.

The patient was then positioned. The injection sites were identified and was prepped with Alcohol. 4cc of preservative free normal saline was mixed with 200 units of Botox. A 30-gauge, 0.5 inch needle was then used to inject a total 155units of Botox. Muscles injected included: bilateral corrugator (5U each) and frontalis (10U each, 2 injections), procerus (5U), bilateral Temporalis (20U each), bilateral occipitalis (15U each), bilateral cervical paraspinal muscles (10U each) and bilateral trapezii (15U each) The patient tolerated the procedure well with no complaints.

botox lot # \_\_\_\_\_ . exp date \_\_\_\_\_

Follow-up: The patient was then discharged from clinic and will follow up on

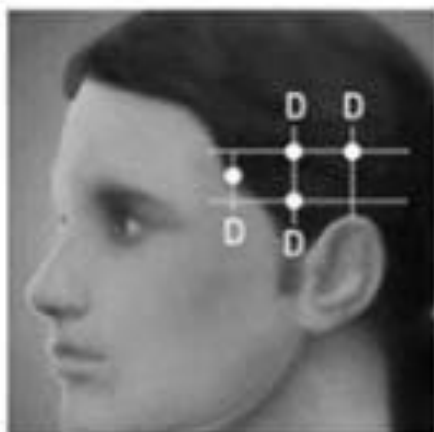




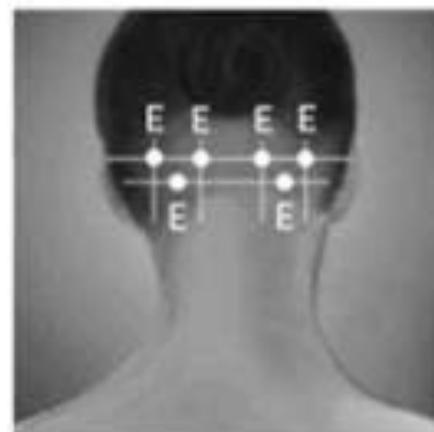
A. Corrugator: 5 U each side

B. Procerus: 5 U [one site]

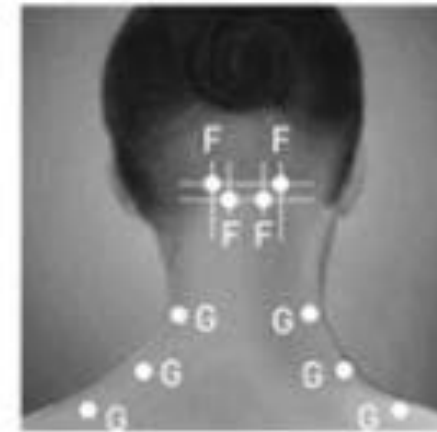
C. Frontalis: 10 U each side



D. Temporalis: 20 U each side



E. Occipitalis: 15 U each side



F. Cervical paraspinal:  
10 U each side

G. Trapezius:  
15 U each side

**Table 1: BOTOX Dosing by Muscle for Chronic Migraine**

Head/Neck Area	Recommended Dose (Number of Sites <sup>a</sup> )
Frontalis <sup>b</sup>	20 Units divided in 4 sites
Corrugator <sup>b</sup>	10 Units divided in 2 sites
Procerus	5 Units in 1 site
Occipitalis <sup>b</sup>	30 Units divided in 6 sites
Temporalis <sup>b</sup>	40 Units divided in 8 sites
Trapezius <sup>b</sup>	30 Units divided in 6 sites
Cervical Paraspinal Muscle Group <sup>b</sup>	20 Units divided in 4 sites
<b>Total Dose:</b>	<b>155 Units divided in 31 sites</b>

<sup>a</sup> Each IM injection site = 0.1 mL = 5 Units BOTOX



## Post-injection Patient Management

Patients should be reassured that any wheals or blebs at the injection site, particularly on the forehead, will disappear within approximately 2 hours.

Patients should also be prepared for the reduction in hyperfunctional lines of the face. The effect on the dynamic, hyper-functional lines of facial expression may take several days.

The headache relief may take several weeks to reach its maximal benefit. The response to injection may change over time; with repeated injections, some patients report a greater therapeutic effect.

Patients should be evaluated 4 to 6 weeks after the first injection. Patients still need acute medications for breakthrough headaches. They should be instructed to maintain a headache diary in order to document the frequency, location, and severity of headache, and the amount of medication taken over a full 4-month period from the start of therapy.



# Billing & Coding

## ICD-10 Codes (diagnostic codes)

346.70 Chronic Migraine (ICD-9)

Continue to use until October 2014

G43.0 Migraine (ICD-10)

Mandatory as of October 2014



# Billing & Coding

## CPT Codes (procedure codes)

### Chemodenervation Chronic Migraine - 64615

- ◆ New 2013
- ◆ Bilateral code, report only once per session, Quantity = 1
- ◆ Botulinum toxin codes do not require bilateral modifier
- ◆ Replaces 64612 (facial nerve) and 64613 (neck muscles)

OnabotulinumtoxinA, 1 unit: J0585



# Reimbursement

<https://www.botoxreimbursement.us>

[botoxreimbursementsolutions.com](https://www.botoxreimbursementsolutions.com)

1-800-44-BOTOX

Option4



# Resources for Practitioners

[http://www.americanheadachesociety.org/comprehensive migraine education program/education/](http://www.americanheadachesociety.org/comprehensive_migraine_education_program/education/)

AHS designates AMA PRA Category 1 credit(s)<sup>TM</sup> for this medical education activity, Comprehensive Migraine Education Program, for a maximum of 4.75 AMA PRA Category 1 Credit(s)<sup>TM</sup> for the morning program, 3.5 AMA PRA Category 1 Credit(s)<sup>TM</sup> for the Procedural Headache Medicine Workshop, and 3.25 AMA PRA Category 1 Credit(s)<sup>TM</sup> for the Behavioral and Non-Pharmacologic Enhancements to Headache Management Workshop. No Cost to Healthcare professionals.

Ongoing program: For more information, call (856) 423-0043 or email [AHSHQ@talley.com](mailto:AHSHQ@talley.com)



# Resources for Patients

[http://www.allergan.com/responsibility/patient\\_resources/patient-assistance\\_programs.htm](http://www.allergan.com/responsibility/patient_resources/patient-assistance_programs.htm)

## Patient Assistance Programs

ALLERGAN CUSTOMER SERVICE CONTACT INFORMATION

1.800.433.8871

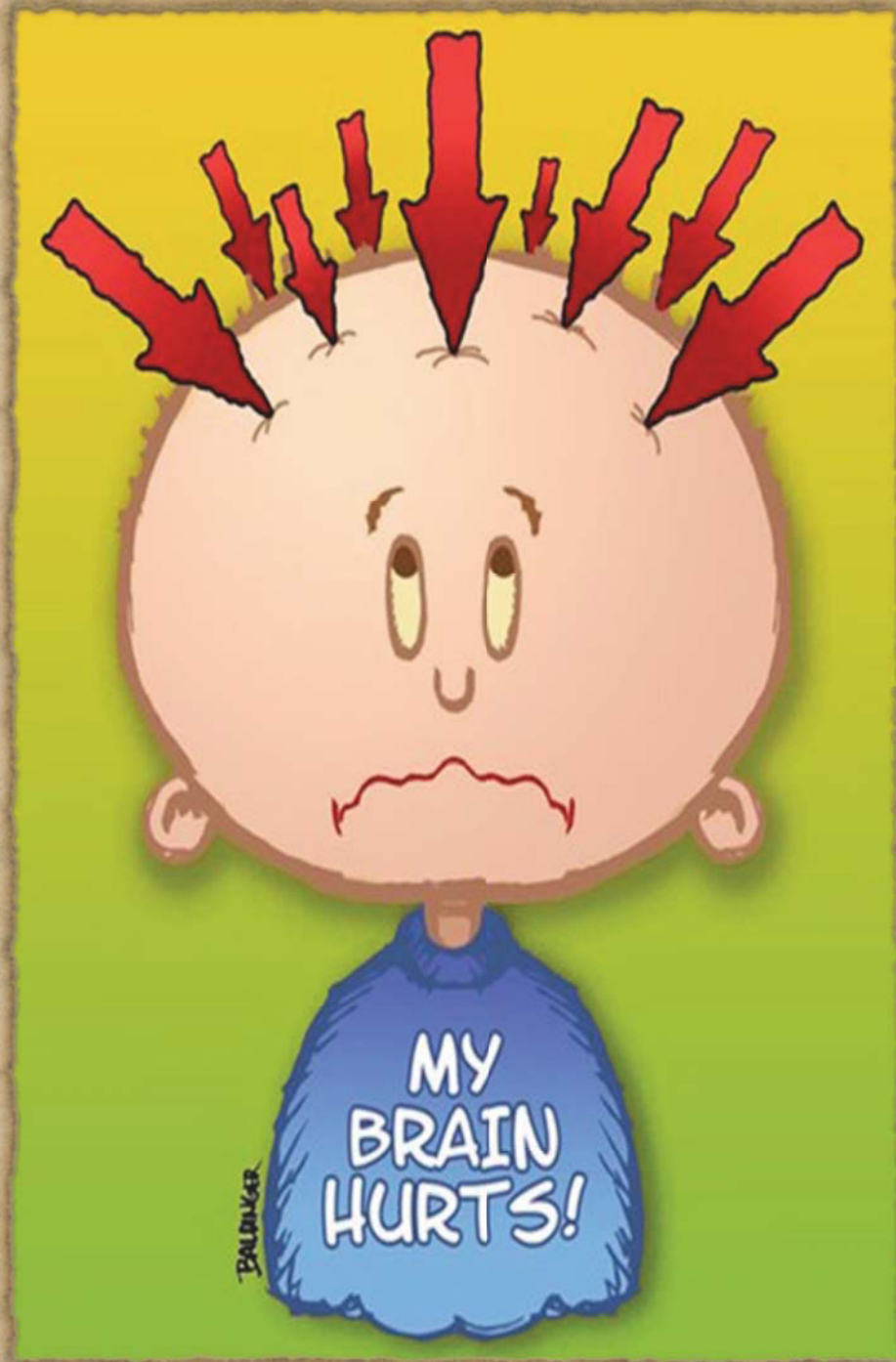
Allergan participates in three different programs designed to provide access to Allergan medications and treatments for those facing financial distress.

RxHope

BOTOX PATIENT ASSISTANCE™ Program

The Cervical Dystonia Fund





TRADITIONAL



# Phase III Research Evaluating Migraine Prophylaxis Therapy (PREEMPT)

## PREEMPT Injection Paradigm

The paradigm includes a fixed-site, fixed dose & modified follow-the-pain treatment model:

- \* 155 U OnabotulinumA administered as 31 fixed-site, fixed-dose injections across 7 specific head/neck muscle areas.
- \* Up to an additional 40 U can be administered at additional sites, following the "follow-the-pain" strategy.



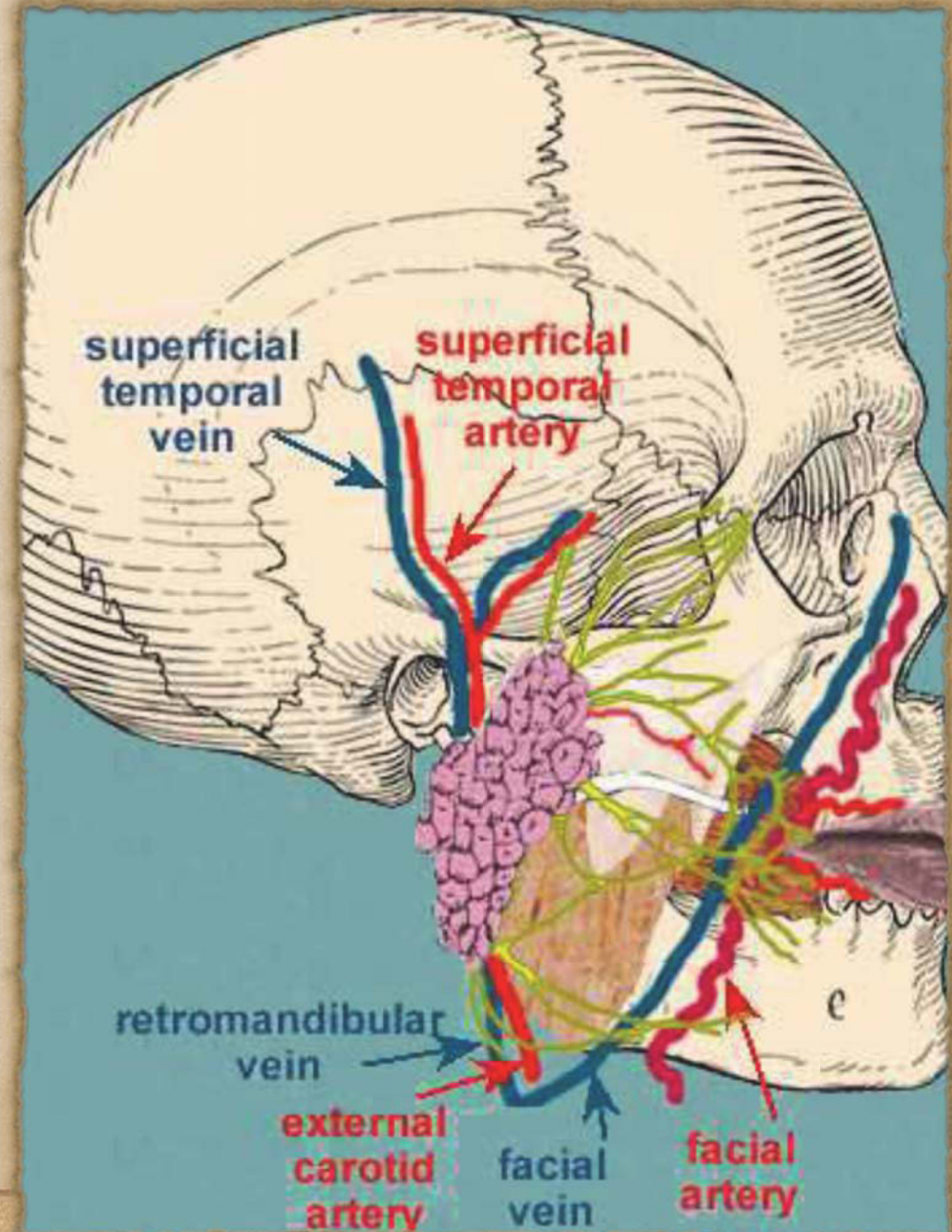
# Reconstitution/demonstration

- ◆ Dilution 100U vial - 2.0ml saline. 200U vial - 4.0ml saline. Goal - 5.0 units in 0.1ml volume.
- ◆ Gently mix the botox, not shake.
- ◆ Draw the product up w/o inverting the vial.
- ◆ Use 30G1/2 needle for injection.
- ◆ 100U vial = two 1ml tuberculin syringes.
- ◆ 200U vial = four 1ml tuberculin syringes.
- ◆ Once reconstituted, product should be used within 24hrs., and kept refrigerated.



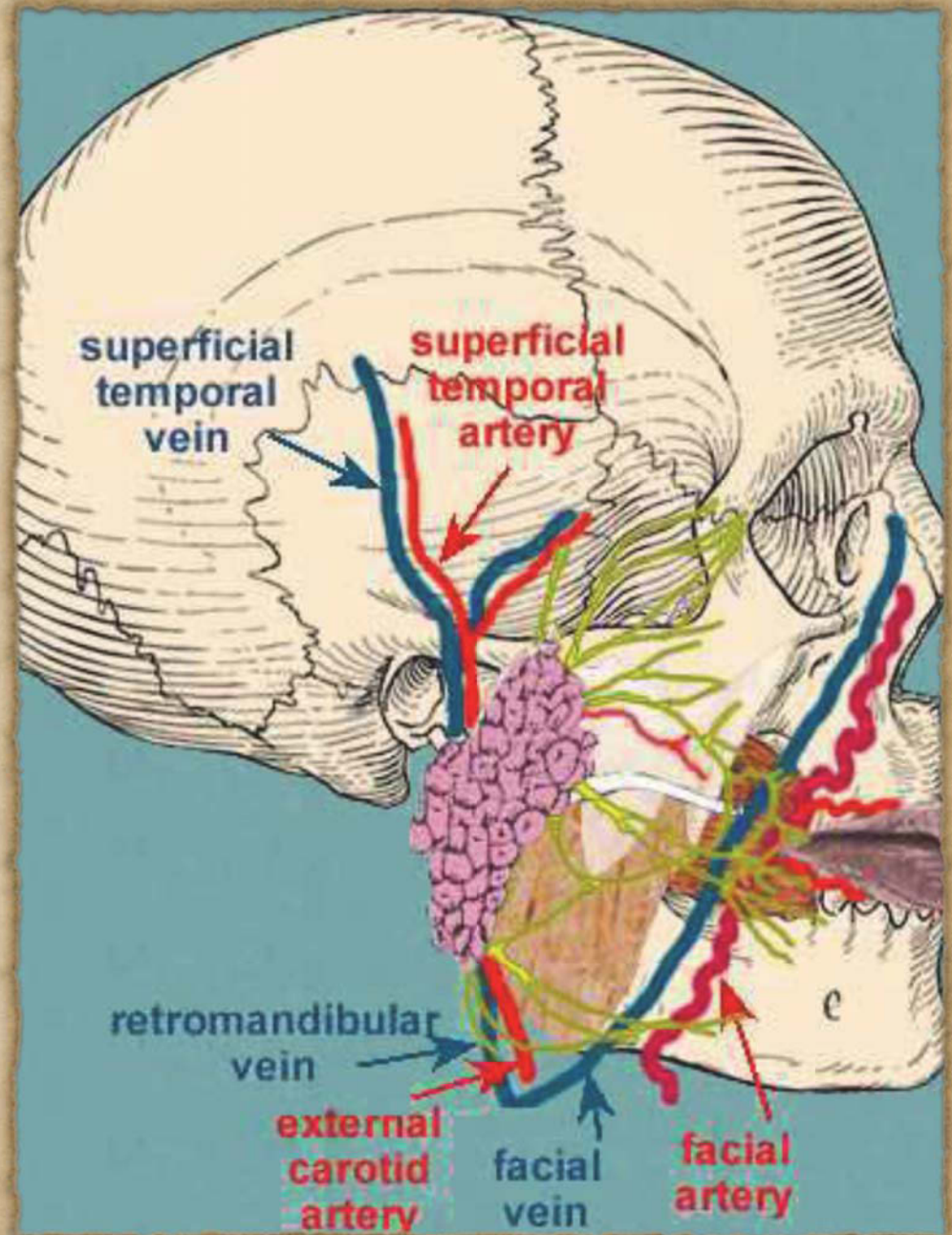
The arterial and venous supply to the face is seen in the diagram

- ◆ Facial artery
- ◆ inferior labial
- ◆ superior labial
- ◆ angular
- ◆ Facial vein
- ◆ Superficial temporal artery
- ◆ Superficial temporal vein





- ◆ Superficial temporal artery
- ◆ Superficial temporal vein





# Position Patient

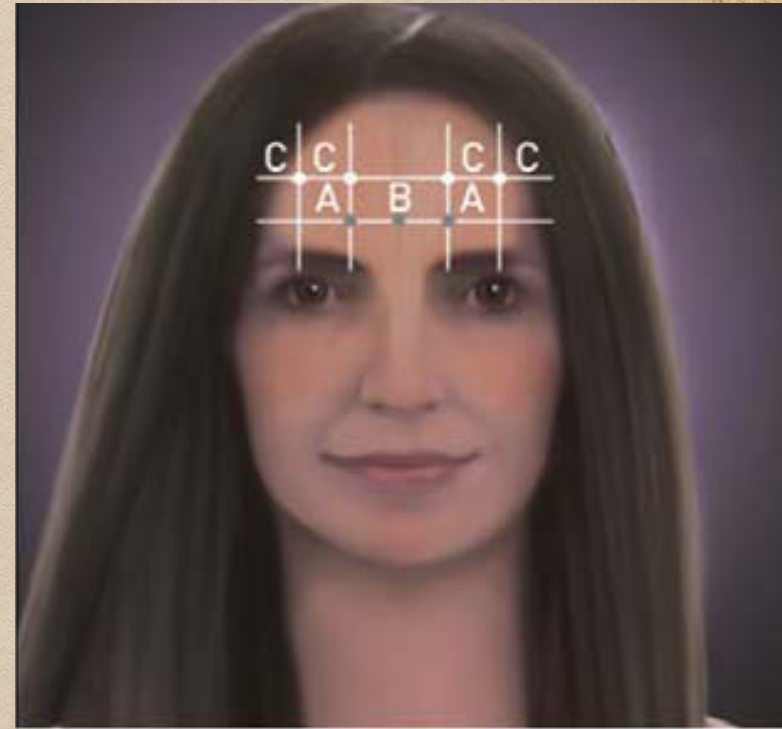
1. Supine for injections into the corrugator, procerus, frontalis, and temporalis.
2. Sitting for injections into the occipitalis, cervical paraspinal, and trapezius muscles.

The practitioner should first visually inspect and palpate each muscle prior to injection to verify muscle delineation, and determined whether there was any muscle tenderness and areas of pain that required additional treatment.



# Corrugator

- Injection site is located approximately 1.5 cm (1 finger's breadth) above the medial superior edge of the orbital ridge (bony landmark).
- The thumb was placed under the corrugator muscle and the injection was done with the needle angled up and away from the eye (toward the forehead), to prevent ptosis of the eyelid.



A. Corrugator  
5 U each side

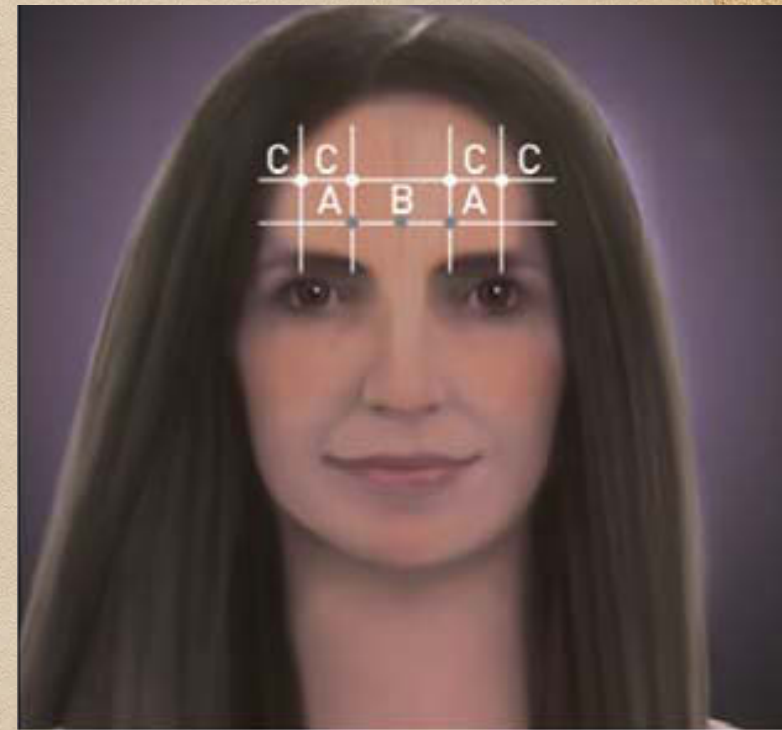
B. Procerus  
5 U (one site)

C. Frontalis  
10 U each side



# Procerus

- 1.5 cm above the medial superior aspect of the orbital ridge (bony landmark) of each eye.
- This injection site is midway between the 2 corrugator injections, as if there is a single horizontal line connecting all 3 of these injections.



A. Corrugator  
5 U each side

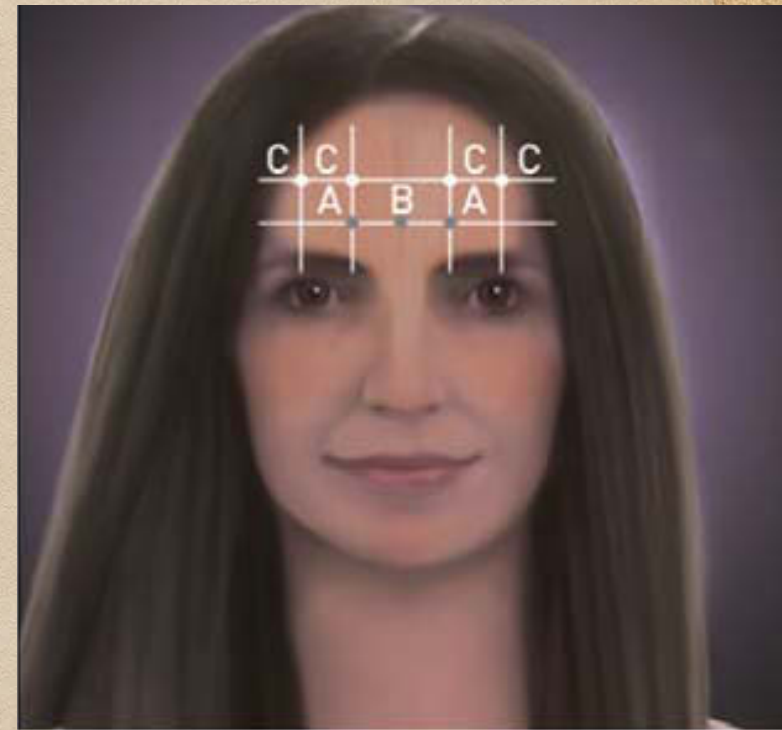
B. Procerus  
5 U (one site)

C. Frontalis  
10 U each side



# Frontalis

- medial injection sites: a visual line was drawn up from the medial edge of the eyebrow about 1.5 cm (1 finger's breadth) from the corrugator injection site.
- lateral injection sites: are parallel and approximately 1.5 cm lateral of the medial injections sites

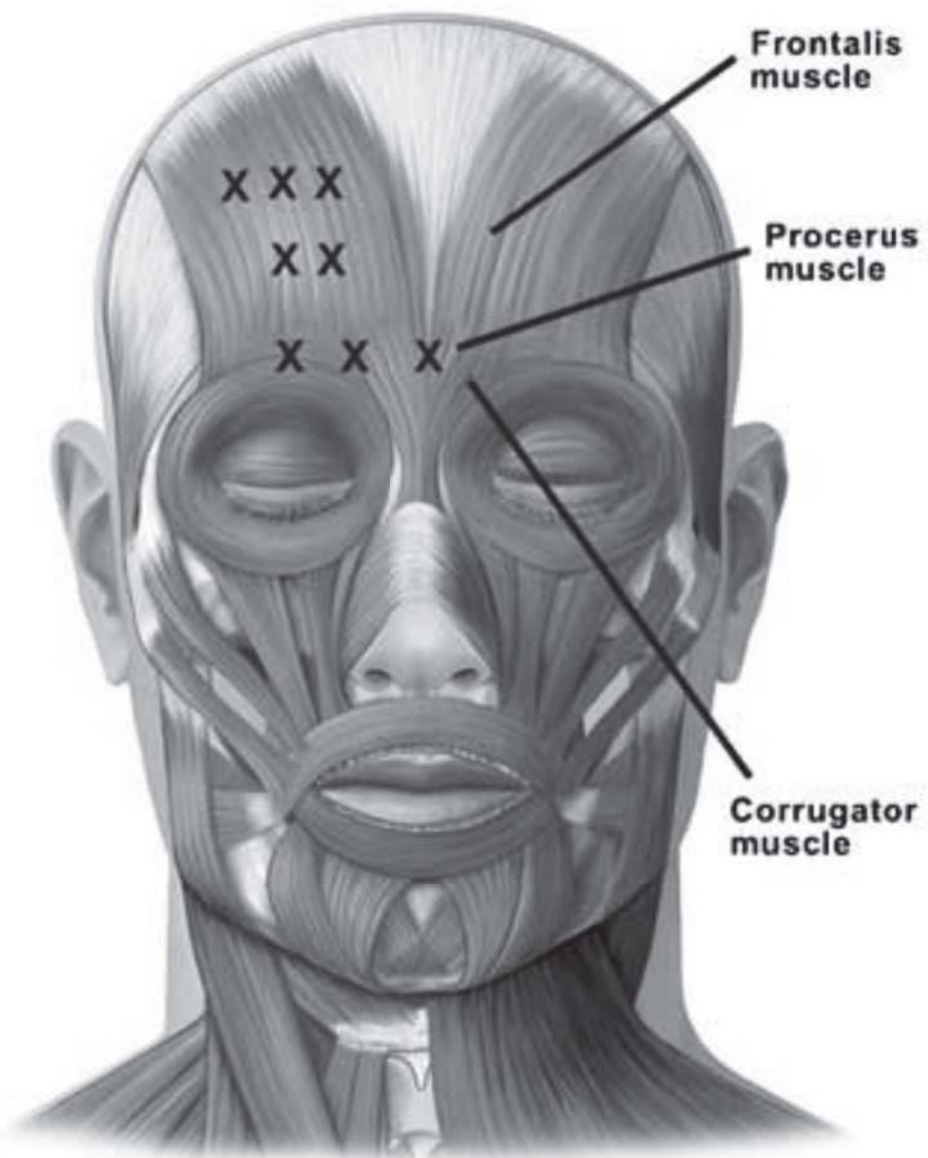


A. Corrugator  
5 U each side

B. Procerus  
5 U (one site)

C. Frontalis  
10 U each side



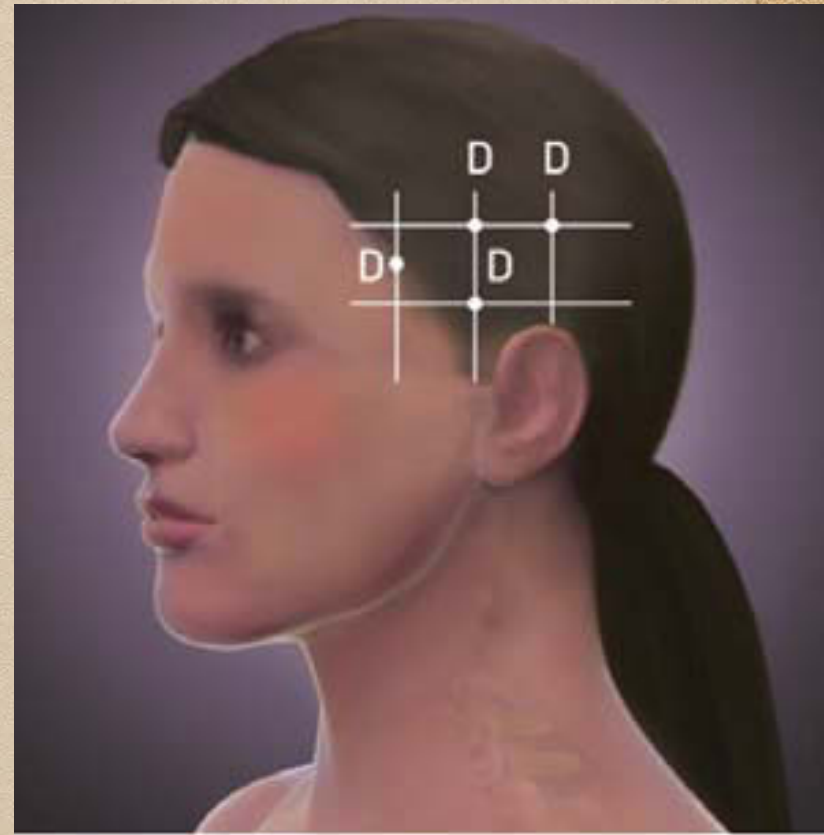




# Temporalis

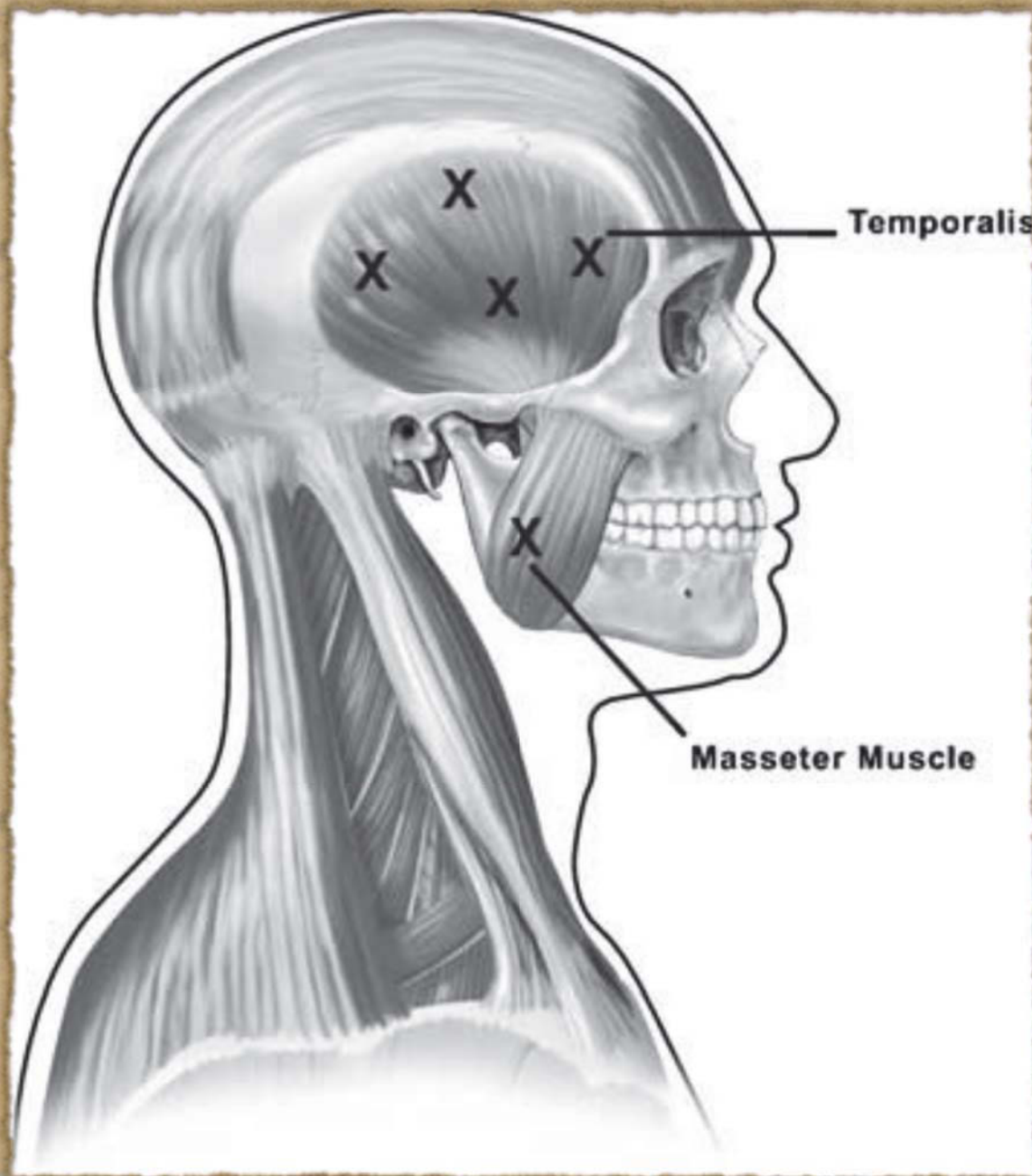
Patient is instructed to clench teeth to assist in the location of the anterior aspect of the temporalis muscle, which was palpated.

1. just behind this point (approximately 2 fingers' breadth) behind the hairline.
2. approximately 0.5 cm superior and 1.5 cm posterior to the first injection in the medial aspect of the muscle.
3. parallel and approximately 1.5 cm posterior to the second injection.
4. 1.5 cm below and perpendicular to the second injection, into the medial aspect of the muscle



D. Temporalis  
20 U each side







# Occipitalis

1. Just above the occipital protuberance along the supranuchal ridge and approximately 1 cm left/right.
2. The second injection is given approximately 1 cm to the left/right and approximately 1 cm above the first injection. The third injection was given 1 cm medial and 1 cm above the first injection site.

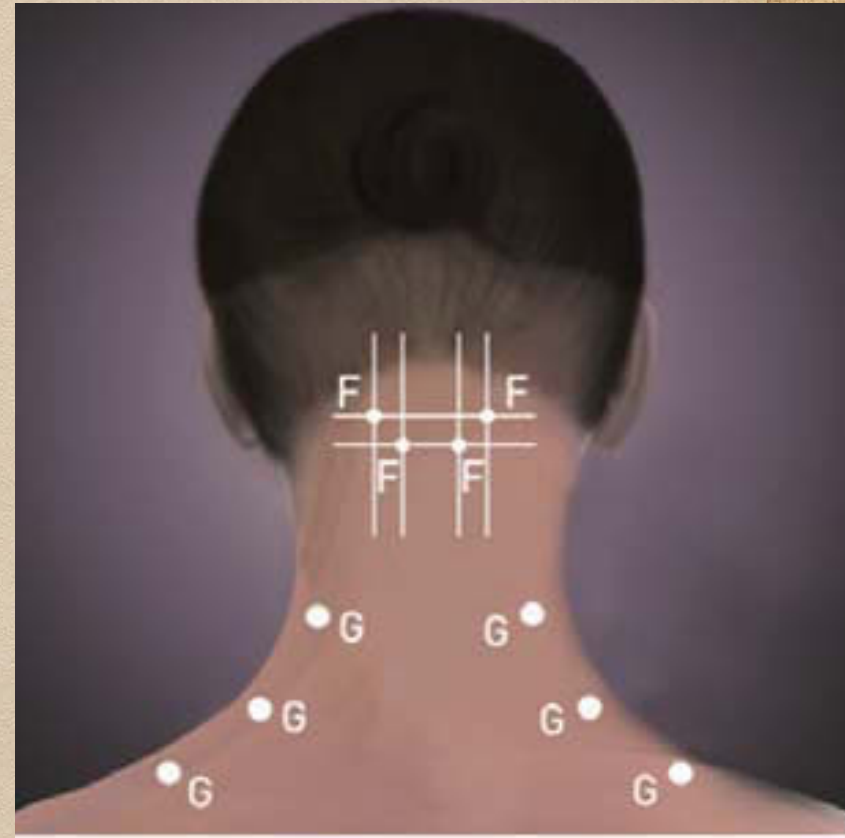


E. Occipitalis  
15 U each side



# Cervicalis

1. lateral to the midline,  
approximately 3-5 cm inferior  
to the occipital protuberance.
2. the same side, 1 cm lateral and  
superior to the first injection  
(diagonally toward the ear from  
the first injection)



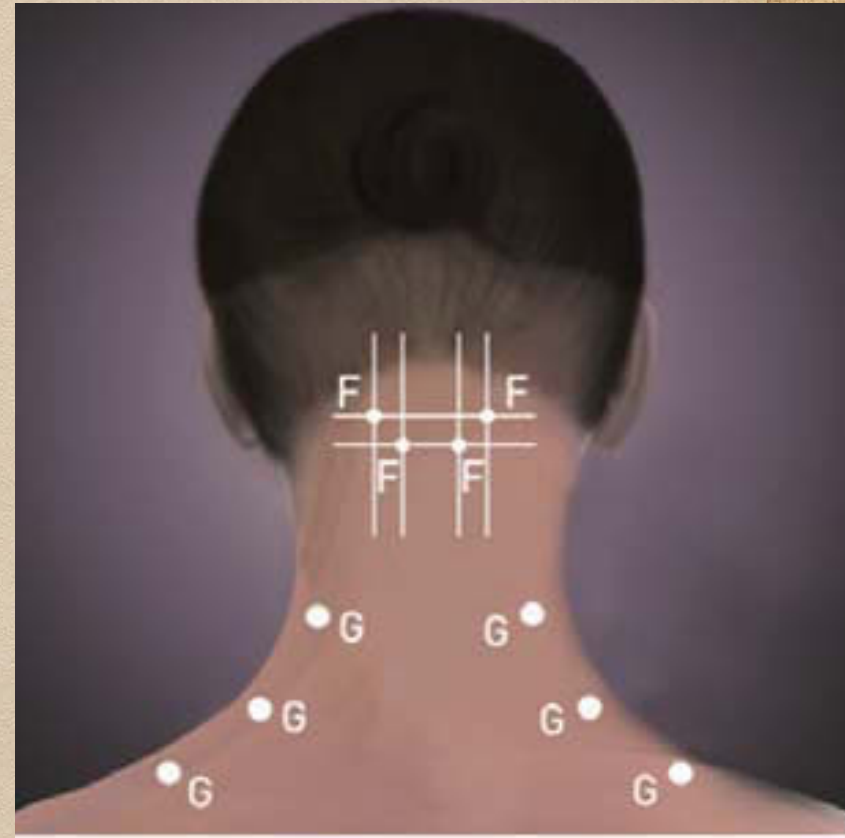
F. Cervical paraspinal  
10 U each side

G. Trapezius  
15 U each side



# Trapezius

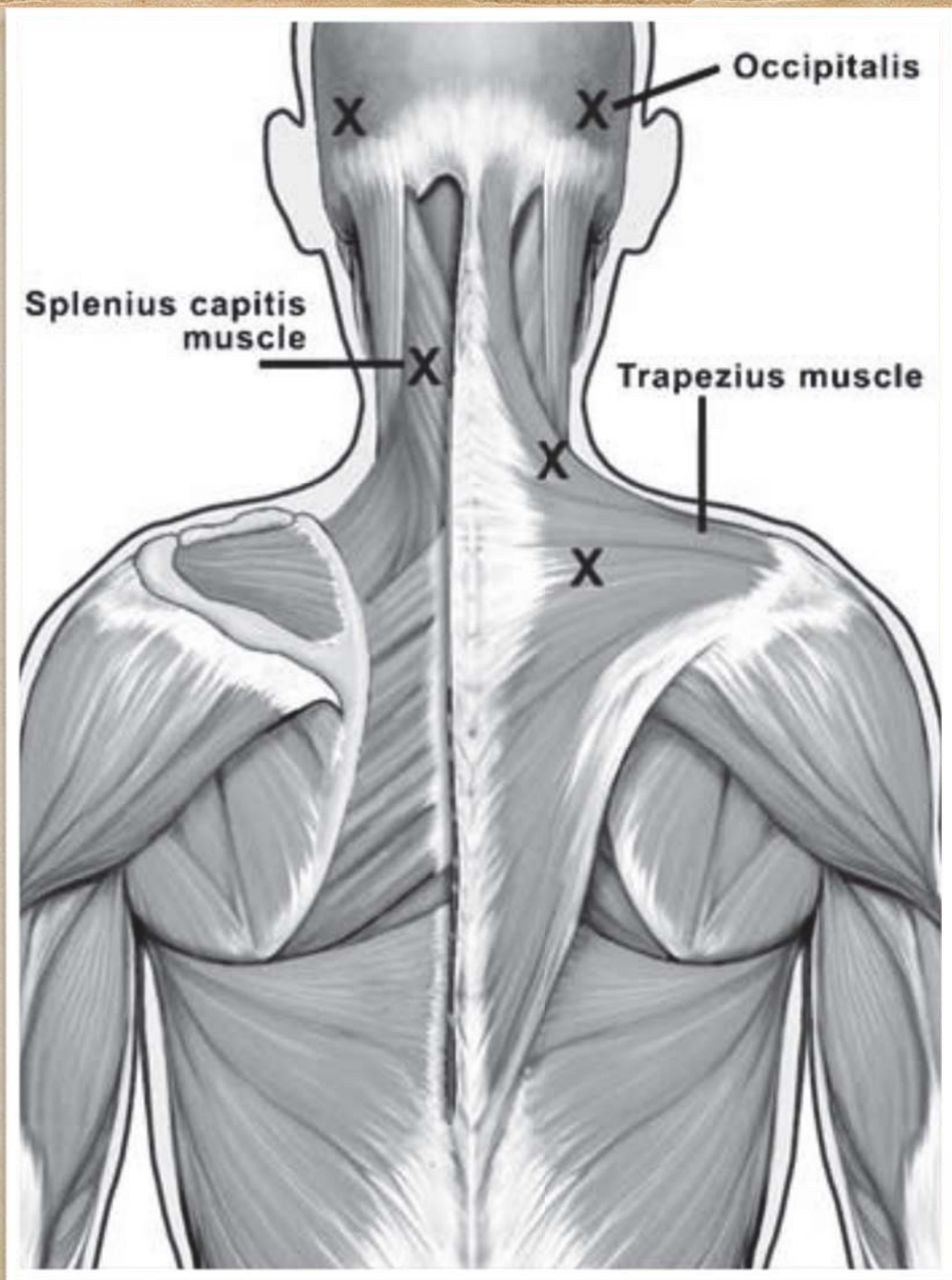
- Beginning on the left side, the muscle was visually divided into 3 sections
  1. Lateral aspect of the muscle.
  2. Moving medially, to the mid-portion of the trapezius.
  3. Medially and superiorly within the third section of the muscle.



F. Cervical paraspinal  
10 U each side

G. Trapezius  
15 U each side







# Overview

- ◆ Identify the right patient/make the correct diagnosis.
- ◆ Define your treatment options.
- ◆ Decide trial of PREEMPT.
- ◆ Understand required documentation.
- ◆ Understand the proper preparation and administration.
- ◆ Resources (patient and provider)



