

Neuropathic pain

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References

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1. <http://www.iasp-pain.org/Taxonomy?navItemNumber=576#Neuropathicpain>. Accessed 24 Aug 2015.
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http://www.practicingclinician.com/H2_2009/neurqa.pdf



Definition

- The International Association for the Study of Pain (IASP) defined **neuropathic pain** as

“pain caused by a lesion or disease of the somatosensory nervous system”²

- Neuropathic pain conditions can occurs as **a single entity** or **combined with other** acute, chronic or other neuropathic conditions.³

reference



Neuropathic pain \neq Nociceptive Pain

It is important to recognize the difference between **neuropathic** and **nociceptive pain**.

- Neuropathic pain: cause by a lesion/ disease **in** the somatosensory nervous system.
- Nociceptive pain: pain that arises from **external source** which which activated the nociceptor. This external stimuli may have actual damage or threatened damage to tissue.



Common neuropathic pain conditions in primary care

Condition	pathophysiology
Post herpetic neuralgia (PHN)	Infection
Trigeminal neuralgia	Peripheral nerve compression/ idiopathic
Painful DM neuropathy	Metabolic disease
Post surgical neuropathic pain syndromes (PSNPS)	Trauma/ Surgery



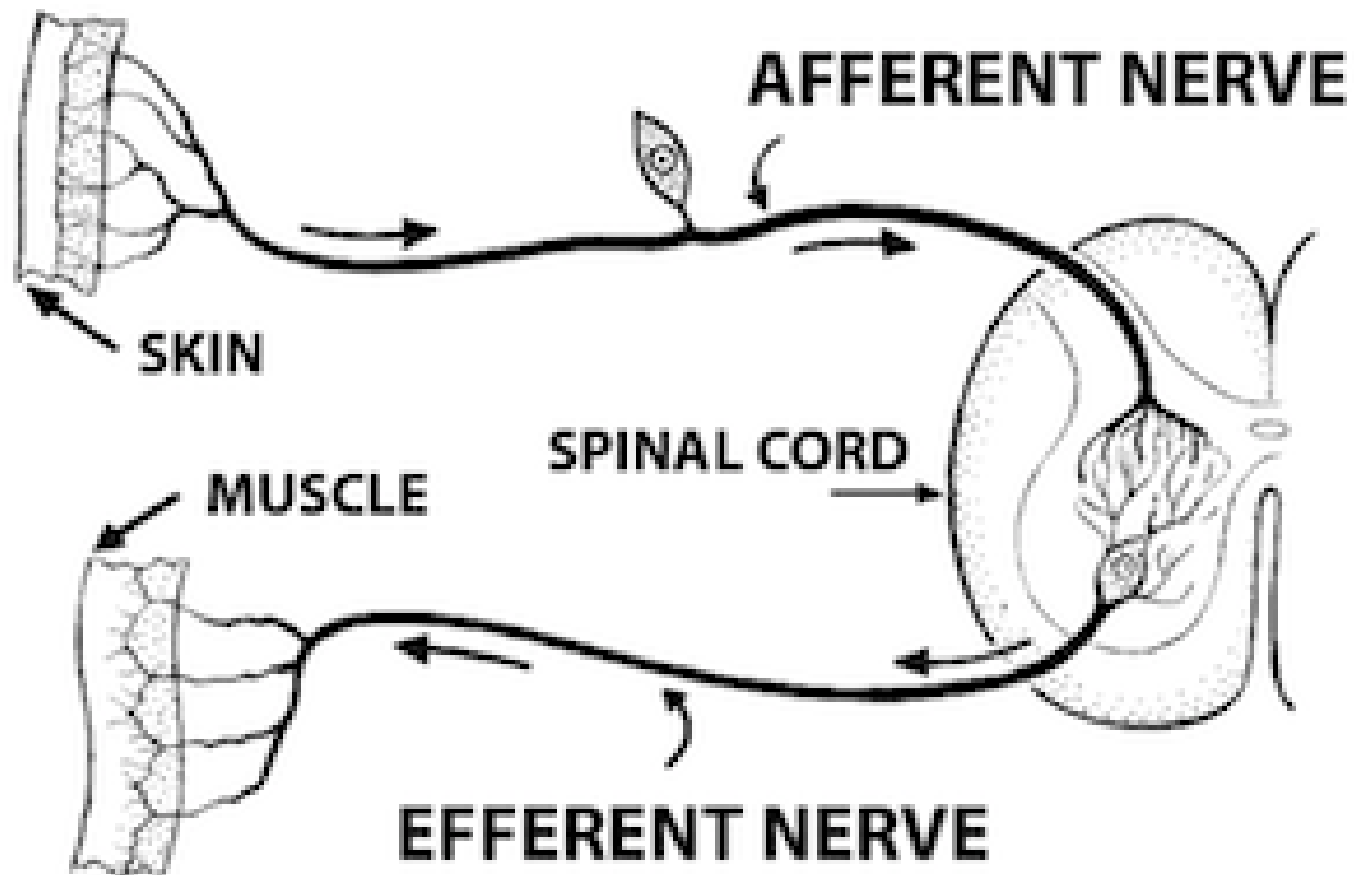
Pathophysiology of neuropathic pain

The pathophysiology is complex

There are multiple mechanisms involved, which can be classified by **Peripheral Mechanism** and **Central mechanism**.
(4)

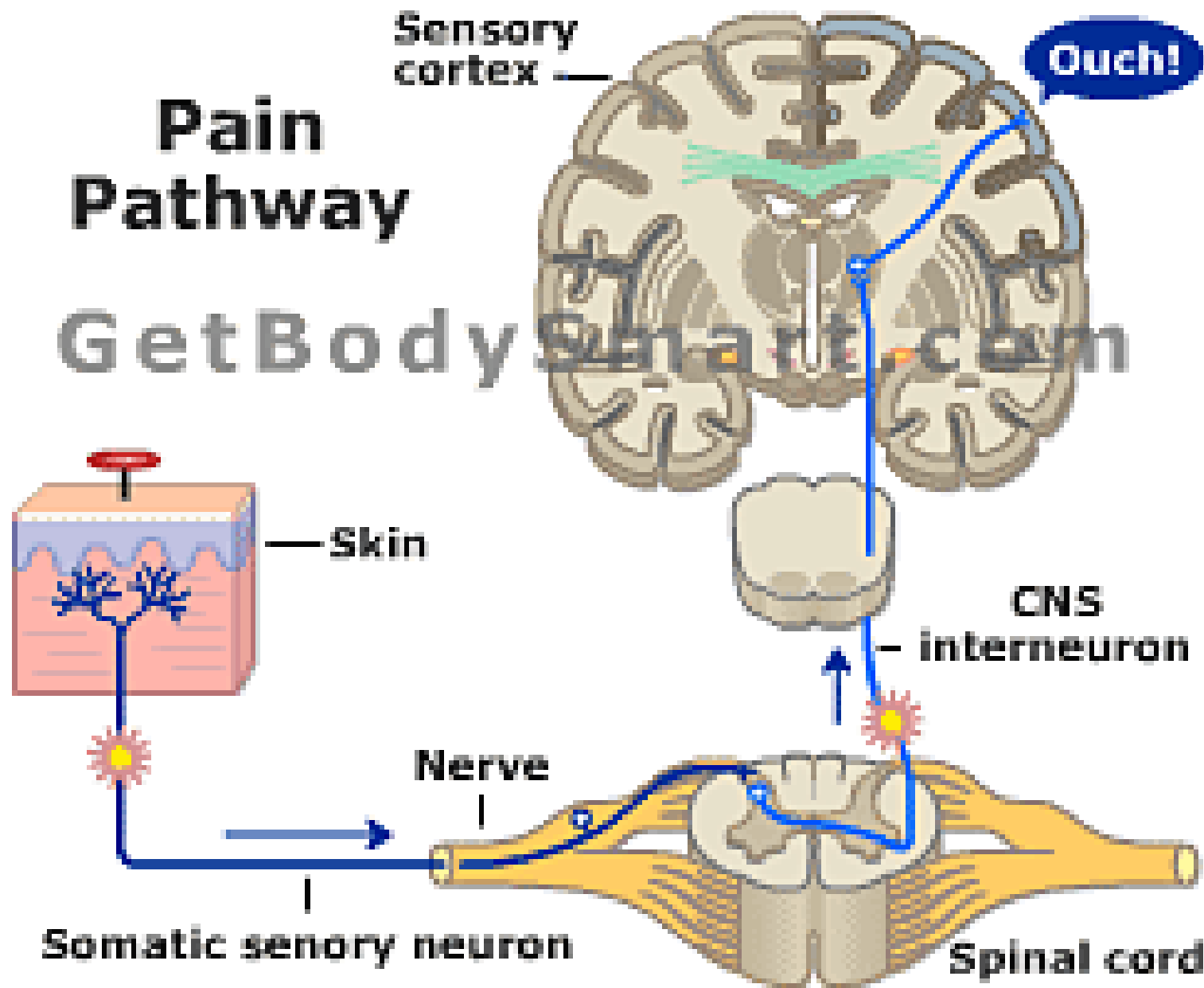
Malaysian guidelines Management of neuropathic pain 2nd Edition 2012





Pain Pathway

GetBodySmart.com



Clinical assessment

In order to establish diagnosis of neuropathic pain, clinician needs to identify

- Location of pain (using pain drawing)
- Pain characteristic
- Assess pain severity
 - Numerical rating scale
 - Visual analogue scale



Name: _____

Date: _____

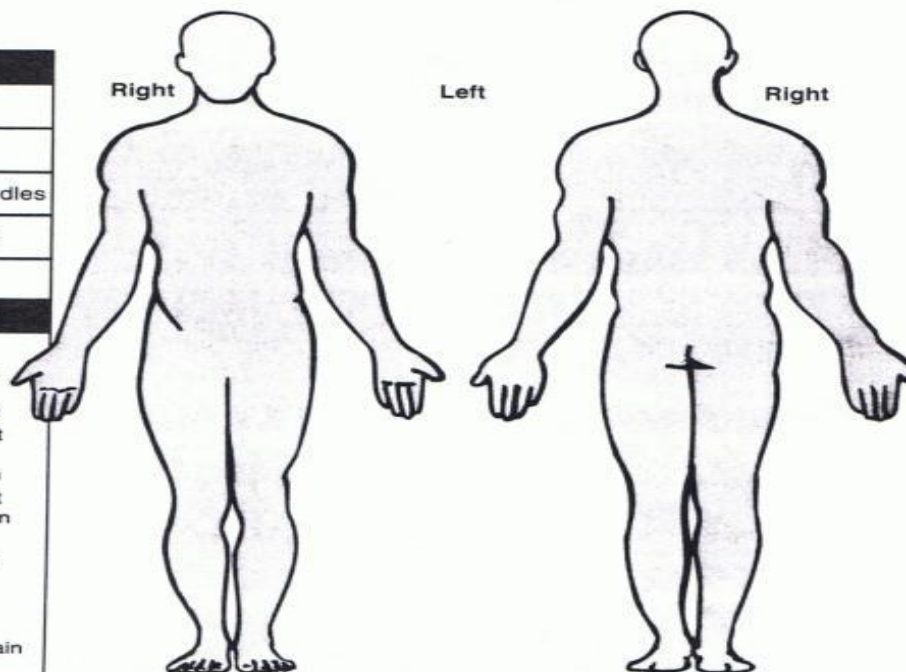
Pain Drawing

Instructions: Mark these drawings according to where you hurt (if the right side of your neck hurts, mark the drawing on the right side of the neck, etc.). Please indicate which sensations you feel by referring to the key below.

☐ RIGHT HANDED

☐ LEFT HANDED

KEY	
////	Stabbing
XXXX	Burning
0000	Pins & Needles
====	Numbness
++++	Aching
PAIN LEVEL	
0	No pain
1	Mild pain; you are aware of it but it doesn't bother you
2	Moderate pain that you can tolerate without medication
3	Moderate pain that requires medication to tolerate
4-5	More severe pain; you begin to feel antisocial
6	Severe pain
7-9	Intensely severe pain
10	Most severe pain; it may make you contemplate suicide



CIRCLE YOUR CURRENT PAIN LEVEL
0 1 2 3 4 5 6 7 8 9 10

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www.aapmr.org



Table 2 Common Features Suggestive of Neuropathic Pain

Term	Definition
Symptoms	
Paresthesias	Nonpainful positive sensations ("antcrawling," "tingling")
Burning pain	Frequent quality of spontaneous pain sensations
Shooting pain	Spontaneous or evoked intense pain sensation of several seconds' duration
Signs	
Hypoesthesia	Impaired sensitivity to a stimulus
Tactile hypoesthesia	Impaired sensitivity to tactile stimuli
Cold hypoesthesia	Impaired sensitivity to cold
Hypoalgesia	Impaired sensitivity to a normally painful stimulus
Hyperalgesia	Increased pain sensitivity (may include a decrease in threshold and an increase in suprathreshold response)
Punctate hyperalgesia	Hyperalgesia to punctuate stimuli such as a pinprick
Static hyperalgesia	Hyperalgesia to blunt pressure
Heat hyperalgesia	Hyperalgesia to heat stimuli
Cold hyperalgesia	Hyperalgesia to cold stimuli
Allodynia	Pain due to a nonnociceptive stimulus

Adapted from *Handbook of Clinical Neurology*.^{41,42}



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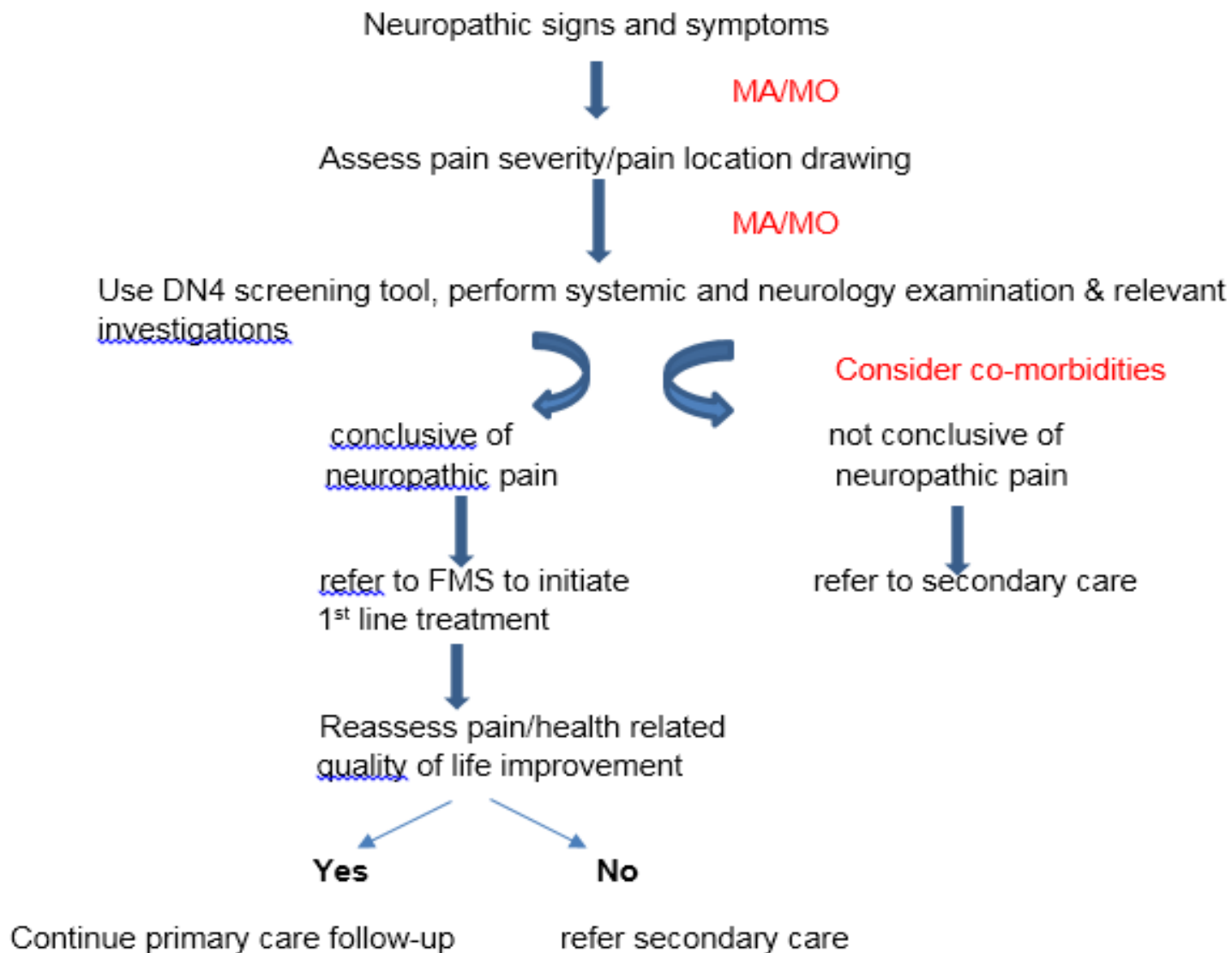


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History/ Examination

1. Site & description of pain
2. Underlying comorbidities to identify possible causes (DM, stroke, herpes zoster, trauma/ surgery ...)
3. Physical examination: general & neurological assessment
4. Impact of pain to daily function & psychology wellbeing



Questionnaire

- screening tool
- suitable for primary care

ID Pain™ : Identifying Neuropathic Pain

1. Did the pain feel like pins & needles?
☐ YES (+1 point) ☐ NO (0 points)
2. Did the pain feel hot / burning?
☐ YES (+1 point) ☐ NO (0 points)
3. Did the pain feel numb?
☐ YES (+1 point) ☐ NO (0 points)
4. Did the pain feel like electrical shocks?
☐ YES (+1 point) ☐ NO (0 points)
5. Is the pain made worse with the touch of clothing or bedsheets?
☐ YES (+1 point) ☐ NO (0 points)
6. Is the pain limited to your joints?
☐ YES (-1 point) ☐ NO (0 points)

- 1 Neuropathic pain not likely
- 0 Neuropathic pain less likely
- 1 Neuropathic pain less likely
- 2 Consider neuropathic pain
- 3 Consider neuropathic pain
- 4 Strongly consider neuropathic pain
- 5 Strongly consider neuropathic pain

TOTAL SCORE =

• Minimum total score = -1 • Maximum total score = 5

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☐ YES (+1 point)

☐ NO (0 points)

6. Is the pain limited to your joints?

☐ YES (-1 point)

☐ NO (0 points)

-1 Neuropathic pain not likely

0 Neuropathic pain less likely

1 Neuropathic pain less likely

2 Consider neuropathic pain

3 Consider neuropathic pain

4 Strongly consider neuropathic pain

5 Strongly consider neuropathic pain

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- 1 .Post herpetic neuralgia (PHN)
2. trigeminal neuralgia
3. Painful Diabetes neuropathy
4. Chronic Post-surgical pain (CPSP)



Post herpetic neuralgia (PHN)



Definition : PHN

- Pain related to herpes zoster. The pain lasted ≥ 120 days from rash onset
- Risk factors for PHN
 - older age,
 - greater severity of acute episodes (pain & rash)
 - patients with these risk factors may have persisting pain 6 months after rash onset.



Case Scenario

- 58 year old male, c/o burning pain over the left chest wall.
- 2 months ago, acute herpes zoster infection on same site.

What's next?



More history about “the pain”

- ONSET: started just before the rash erupted
- SEVERITY: initially mild pain, but progressively worsening. Now constant pain, score 6/10,
- CHARACTERISTIC:
 - **Burning** in nature,
 - Episodes of severe **sharp shooting pain**, pain score 9/10, occurring 3-4 times per hour
 - also had pinching pain over Left nipple, on and off nipple.
- uncomfortable to wear singlet as it was painful
-



History (cont...)

- Poor sleep because of the pain
- stopped socialising since the onset of the pain
- felt depressed and admitted to having suicidal thoughts.
- no significant past medical/ surgical history
- Occupation: retired dietician

Physical examination

- healed scars zoster lesions over the anterior and posterior chest wall over L T4 and T5 dermatomes
- allodynia posterior T4
- no other abnormalities found



Diagnosis

- Post-herpetic neuralgia (Shingles)
- Management?
 1. Antidepressants - Amitriptyline 25 mg nocte
 2. Relaxation



Follow-up at one week

With amitriptyline the patient could sleep better and the burning pain had subsided to about 3/10. However he complained of dry mouth and excessive drowsiness and still have several episodes of sharp shooting pain on and off.



Management on follow-up

1. Gabapentin 300 mg ON, later increased 300 mg TDS. The sharp shooting pain reduced to one to two brief episodes a day
2. The patient decided to stop amitriptyline because of the dry mouth.
3. After 1 month on gabapentin: pain free, subsequently gradually reduced the dose of Gabapentin and stopped after 3 months of treatment with no recurrence.



Treatment

- 1st line treatments: **tricyclic antidepressants** (60% Vs placebo <10%)*
- 2nd line treatments: anticonvulsants, e.g. **Gabapentin** (43% Vs placebo 12%)
- Role of Psy therapy
 - Explanation to patient “ No ongoing damage”
 - Relaxation technique (suitable for paroxysmal attacks)/ Cognitive Behavioural Therapy

Collins SL et al (2000), J Pain and Sx Management 20:449-58



Treatment

- Other:
 - topical lidocaine 5% patch opioids, tramadol
 - combinations are frequently more effective than any monotherapy.
- Invasive procedures (e.g. sympathetic blockade, intrathecal steroids, and implantable spinal cord stimulators) : mainly in patients refractory to treatment.
- TENS (transcutaneous electrical stimulation) & acupuncture : Ineffective



Painful Diabetes Neuropathy



Painful DPN is a clinical diagnosis

- The symptoms are distal, symmetrical, often associated with nocturnal exacerbations
- “prickling”, “deep aching”, “sharp-pain”, “like electric shock”, and “burning” with “hyperalgesia” and frequently allodynia.
- Among patient with T2DM
 - at diagnosis, 7-13% had pain and paraesthesia.
 - when assessed 10 years after diagnosis, 20-33% has pain and of paraesthesia



Treatment

- 1st line therapies:
 - tricyclic antidepressant (TCA), gabapentin, duloxetine, pregabalin.
Combinations of first-line therapies may be considered, should take into account patient comorbidities and cost.
- 2nd line: opioids (e.g tramadol and oxycodone) may be added in.
- Some evidence:
 - Topical treatment using a 5% lignocaine plaster applied to the most painful area.
- No evidence to support cannabinoid & spinal cord stimulation



Trigeminal neuralgia



Definition: Trigeminal neuralgia

- Severe, unilateral, paroxysmal facial pain
- Patients often describe this as “the worst pain.”
- Women are almost twice as many affected as men, common above age of 40.
- Up to 80-90% of cases classified as idiopathic are compression of the trigeminal nerve close to its exit from the brainstem by an aberrant loop of artery or vein.



Trigeminal neuralgia is a clinical diagnosis.

Diagnostic criteria for classic trigeminal neuralgia

- Paroxysmal attacks of pain, lasting from seconds to min.
- Intense, sharp, superficial, or stabbing pain precipitated from trigger areas
- Attacks are similar in individual patients
- no neurological deficit is clinically evident



Differential diagnosis

- Dental Infection
- Temporomandibular Joint Pain
- Persistent Idiopathic Facial Pain
- Migraine
- Temporal Arteritis



Chronic Post-surgical Pain

- Pain developed after a surgical procedure, persistent for ≥ 2 months duration.
- result from the changes in the nervous system after surgery/injury
- Organic cause should be excluded (e.g. chronic infection, unresolved pre-existing pathology).
- Primary care physician should recognise CPSP early. Treat early has better outcome.
- If symptoms persist despite good compliance to 1st line med, refer pain specialist.



THANK YOU

