S7.3 Tension-Type Headache in Adult: When to Prevent?

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Tension type headache (TTH) – a muscle tension headache is a form of headache that most complained in all age groups. TTH patients often neglect pain by doing self-medication, so it becomes chronic and difficult to treat. TTH patient have decreased quality of life and cause economic burden. The pathogenesis of TTH is still unknown. Peripheral nociceptive mechanisms may play a role in the episodic type whereas central sensitization may relate with chronic type. Conversion from infrequent episodic into frequent episodic and chronic TTH must be noted. Understanding the trigger point of myofacial pain, genetic and psychological factors is essential. Pharmacological, nonpharmacological approach, or both of them are suggested for acute treatment as well as prophylaxis. Self management to all factors that affect the development of TTH must be considered. Appropriate and adequate acute management is requiered. Reduce the risk of chronic TTH development due to inadequate acute therapy and the development of medication overused headache with prophylactic treatment should be considered by patients and clinicians. Preventive therapy could decrease the frequency, severity, intensity and duration of attack, increase the response of acute attack therapy, improve function and quality of life and decrease the disability of TTH patients.

Sertifikat

diberikan kepada

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atas partisipasinya sebagai

Pembicara

SIMPOSIUM

PERTEMUAN ILMIAH NASIONAL

Pain - Headache - Neuro Otology - Neuro Epidemiology

"BETTER LIFE WITHOUT PAIN"

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TENSION TYPE HEADACHE IN ADULT, WHEN PREVENT IT?

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OUTLINE

A. Introduction
B. Clinical Manifestation of TTH
C. Patofisiology of TTH
D. Management of TTH
E. Summary

WHEN WE PREVENT IT?

A. Introduction

Tension type headache (TTH) is the most common type of headache

Prevalence TTH: 42 %
90% of young adults experienced TTH
The most common type of TTH is infrequent, 18-37 % frequent & 2-3% chronic

TTH complaints often to be ignored →transformation ETTH into CTTH→ affect quality of life

It is important to prevent chronicity of TTH

A. Introduction

↑ headache frequency, ↓NSAIDs effectivity → Medication-overused headache (MOH)

Acute onset of TTH should be treated with an adequat therapy

Frequent & chronic TTH should be prevented with prophylaxis therapy

A combination of pharmacological & nonpharmacological therapy for management of TTH

patient can free from pain→didn't developed into chronic → have a better quality of life

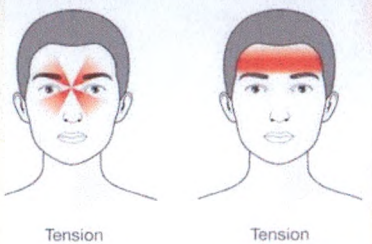
B. Clinical Manifestation

30 minute -7 days

Bilateral Location

pericranial tenderness

Pressing / tightening (non-pulsting)



Photophobia/ phonophobia

Mild / moderate intensity

No nausea / vomiting

Not aggravated by routine physical activity

The International Classification of Headache Disorders, 3rd edition (beta version) (ICHD-3 beta):

- Infrequent episodic: at least 10 episodes of headache occuring on < 1 day per month–on average (< 12 days per year)
- Frequent episodic: at least 10 episodes of headache occuring on 1-14 days per month on average for > 3 months (≥12 dan < 180 days per year)
- Chronic TTH : occuring on ≥15 days per month on average for > 3 months (≥180 days per year)

C. Pathophysiology of TTH (Focusing on the transformation of ETTH into CTTH)

Abnormalities in central & peripheral nociceptive system

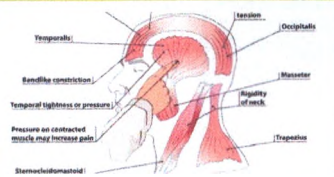
combined with **environmental**, **Physicologic**, and **genetical factor**

Episodic type→Peripheral mechanisme more dominant

chronic type →central sensitization also occur

Physicological stress and environmental factor is the major factor, whereas genetic is the minor factor

Peripheral Mechanism



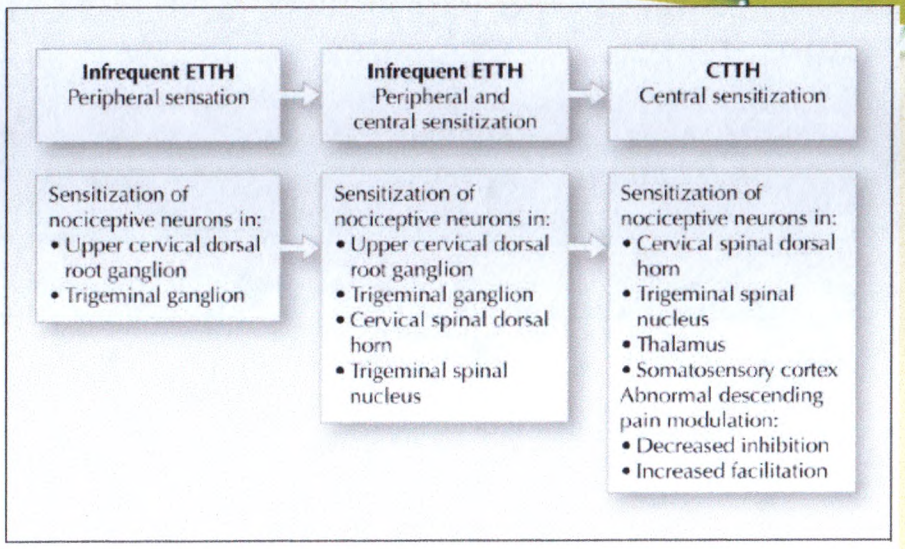
peripheral nociceptive sensitization→ pericranial tenderness through inflamation pathway, ↓ of blood flow, ↑muscle activity, rigidity and muscle stretching

↑ of pain sensitivity is the result from increasing of central nervous system excitablitity

the role of myofacial trigger point→ pain spread from the active myofacial trigger point in the head, neck & shoulder muscle

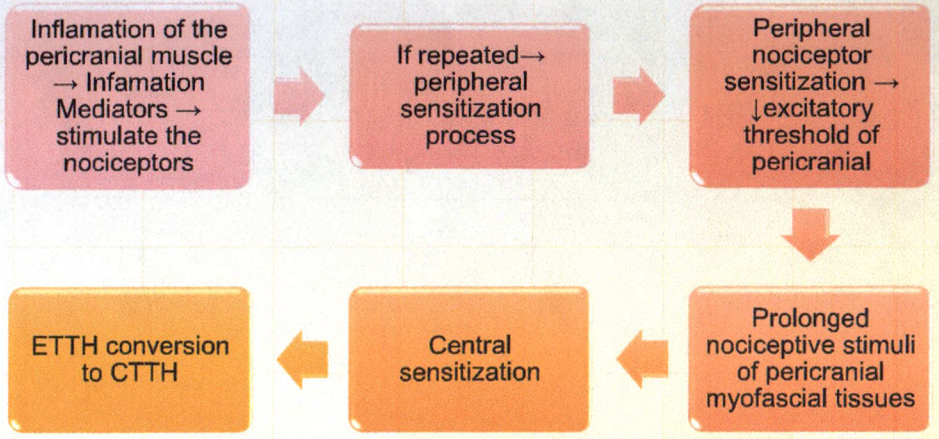
spread into suboccipital muscle, temporalis, trapezius superior and sternocleidomastoideus

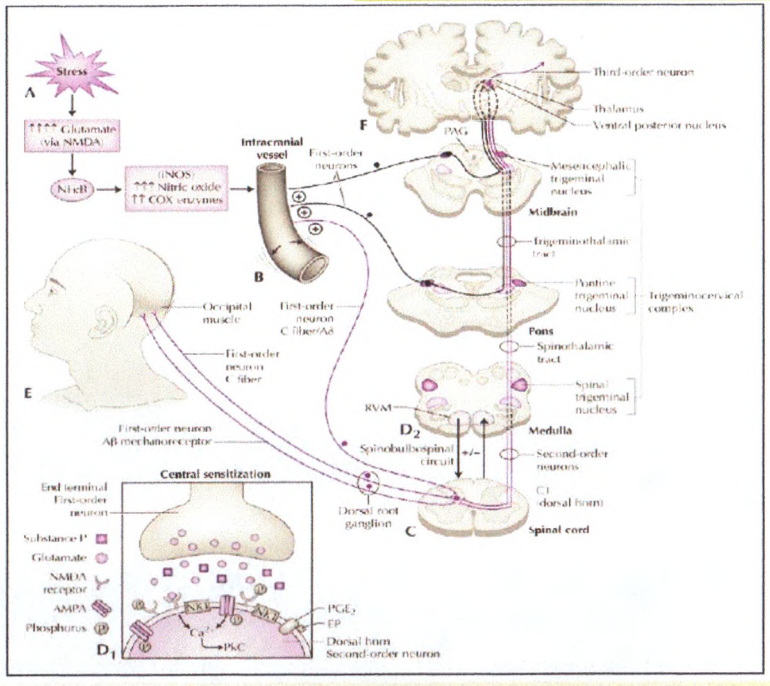
Number of this trigger point are proportional to the expansion of tenderness in TTH



Transformation of ETTH into CTTH. Sentral sensittization mechanism is correlated with the headache frequency. Patient with headache frequency from 5-15 days per month show s a sign of second-order neuron sensitization

Transformation ETTH into CTTH





Picture of Transformation of ETTH into CTTH scheme

D. Management of Tension Type Headache

- Understanding the pathophysiology of TTH chronicity process → important in the management of TTH
- It is important to identify peripheral nociceptive sources to prevent the development of central sensitization in ETTH patient, and reduce central sensitization in CTTH patient
- The antinociceptive effect of *Nitric Oxide Synthase* (NOS) inhibitors decreases central sensitization
- In chronic TTH, the use of amitriptilin is very effective

Table of Pathophysiology and therapeutic implication of TTH

Localization		Mechanisms	Therapeutic implications
Peripheral			
	Pericranial muscle and nociceptors (Aδ-fibers and C-fibers)	Peripheral sensitization Increased muscle hardness Increased muscle tenderness	Acetaminophen Nonsteroidal anti-inflammatory drugs Physical therapy
Central			
	Cervical spinal dorsal horn/trigeminal spinal nucleus	Central sensitization	Amitriptyline NOS inhibition
	Periaqueductal gray (midbrain) and rostral ventral medulla	Deficient descending inhibition	
	Thalamus	Central sensitization	Amitriptyline NOS inhibition
	Limbic system	Emotional control of pain	Biofeedback Relaxation therapy
	Cerebral cortex	Central sensitization	Amitriptyline NOS inhibition

1. The principles of TTH management

The correct diagnosis is the most important thing

Headache diary at least for 4 weeks weeks consecutively, obeserve the precipitating factors & the use of analgetic → possibility of MOH

distinguish TTH from early phase of migraine attack

Comorbidities such as anxiety & depression → identified and treated

Educate the patient

2. Tension-Type Headache Acute Therapy

Infrequent TTH→improve spontaneously, or can take over-the-counter analgesics

The use of OTC should be limited at least 2 days in a week to prevent *medication-overused headache* (MOH)

NSAIDs Eficacy can incerased if it combined with caffeein 64-200 mg → but can produce withdrawal symptom & can lead into chronic daily headache.

Table of Recommendation of Tension Type Headache Acute Therapy

Substance	Dose	Level of recommendation	Comment
Ibuprofen	200-800 mg	A	Gastrointestinal side effect, risk of
Ketoprofen	25 mg	A	bleeding
Aspirin	500-1000 mg	A	Side effects as for ibuprofen
Naproxen	375-550 mg	A	Side effects as for ibuprofen
Diclofenac	12,5-100 mg	A	Side effects as for ibuprofen
Paracetamol	1000 mg	A	Side effects as for ibuprofen, only doses of 12,5-25 mg tested in TTH
Caffeine coomb.	65-200 mg	B	Less risk gastrointestinal side effect compared with NSAIDs See below

Pharmacotherapy	
Acute	Prophylactic
Caffeine comb. 65-200 mg Diclofenac 12,5-100 mg Naproxen 375-550 mg	Venlafaxine 150 mg
Ketoprofen 25 mg Paracetamol 1000 mg Aspirin 500-1000 mg	Mirlazapine 15-30 mg
Ibuprofen 200-280 mg	Amitriptyline 30-75 mg

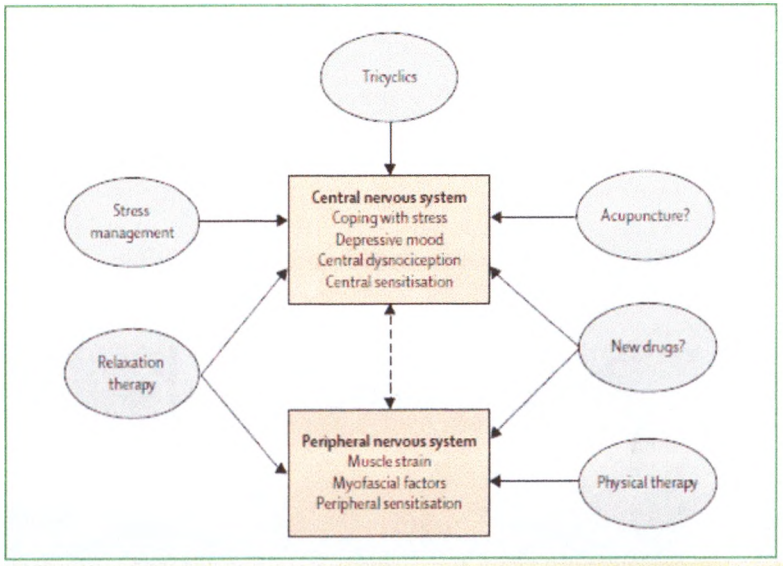
Pharmacological Therapy Paradigm in Tension—type headache

3. Prophylaxis therapy of Tension-type headache

Pharmacology & nonpharmacology (cognitive & behavior therapy)

Goal : ↓frequency, severity & duration of attack,↑responsive ness of acyte treatment, improve function &reduce dissability

For frequent ETTH & CTTH



Preventive therapy of TTH based on the pathophysiology

Things to be considered in the prophylaxis therapy

Start with first line drug

From a low dose

Monotherapy

If the first drug fails→ replace with another drug

Effective therapy : reduced frequency and / or severity of headache at least 50%

Drug of choice for prophylaxis therapy

Substance	Daily dose	Level of recommendation
Drug of first choice		
Amitriptyline	30-75 mg	A
Drugs of second choice		
Mirtazapine	30 mg	B
Venlafaxine	150 mg	B
Drugs of third choice		
Clomipramine	75-150 mg	B
Maprotiline	75 mg	B
Mianserin	30-60 mg	B
The level of recommendation considers side effects and number and quality of the studies		

Non-pharmacological therapy of TTH

- Relaxation techniques, behavioral interventions & physical modalities (exercise, acupuncture massage, spinal manipulation &physiotherapy)
- National Institute of Health Care Excellence (NICE) recommendation : acupuncture
- Self-management therapies : CBT (cognitive behavioral therapy) , education, and Positive mind

E. SUMMARY

- Understanding the pathophysiology of TTH chronicity process is important in the management of TTH
- It is important to identify peripheral nociceptive sources
- An approach of all the factors that underlie TTH should be done →TTH attacks can be prevented
- Frequency reduction prevents chronicity of TTH → patient have a better quality of live

THANK YOU