

Prehospital Pain Management, In Makkah

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Introduction

Pain is one of the commonest symptoms in patients presenting to ambulance services and most common symptom in the prehospital setting; however, timely management of pain in patients continues to be suboptimal. Control of pain is important not only for humanitarian reasons but also because it may prevent deterioration of the patient and allow better assessment. There is no reason to delay relief of pain because of uncertainty with the definitive diagnosis. It does not affect later diagnostic efficacy and that time to pain relief is reduced by pre-hospital administration of pharmacological and non-pharmacological. Prior research has documented the inadequacy of pain management for patients in the prehospital setting; earlier research has archived the insufficiency of pain administration for patients in the prehospital setting.

Objective

To assess the knowledge of emergency medical technicians paramedics (EMT-KSA) and compare their practice perceptions with actual pain management interventions in adults. To improve pain in prehospital. To train ambulance personals in pain management.

Abbreviations

AEDs: Anti-Epileptic Drugs; ASA: Acetyl Salicylic Acid; BB: Beta Blockers; BNZ: Benzodiazapins; BID: Twice a Day; BPN: Branchial Plexus Neuropathy; CBI: Cannabinoids receptor type 1; CCB: Calcium Channel Blockers; CIPN: Chemotherapy Induced Peripheral Neuropathy; CNCP: Chronic Non Cancer Pain; CNS: Central Nervous System; COPD: Chronic Obstructive Pulmonary Disease; CPG: Clinical Practice Guidelines; CR: Controlled Release; IR: Immediate Release; IV: Intravenous; N/A: Not Applicable; NMDA: N Methyl D Aspartate; NRS: Numerical Rating Scale; NSAIDs: Non Steroidal Anti-Inflammatory Drugs; OT: Occupational Therapy; PCA: Patient Controlled Analgesia; PE: Physical Exercise; PED: Poly Ethylen Glycol; PHN: Post Herpetic Neuralgia; PO: Per Oral; PR: Per Rectal; PRN: Pro Re Nata (As need Arises); PT: Physical Therapy; q: Every; RoM: Range of Motion; SCS: Spinal Cord Stimulation; SR: Sustained Release; TCAs: Tricyclic antidepressants; TENS: Transcutaneous

Electrical Nerve stimulation; TID: Three Times a Day; VAS: Visual Analogue Scale; WHO: World Health Organization; M: Male; F: Female.

Literature reviews

Pain is a major symptom in many medical conditions, and can significantly interfere with a person's quality of life and general functioning. Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage. Pain is an individual and Subjective experience modulated by physiological, psychological and environmental factors such as previous events, culture, prognosis, coping strategies, fear and anxiety.

Types of pain

Pain is often described based on how long it lasts.

- Acute pain is short-term pain. It comes on quickly, lasts a relatively short time and can range from mild to severe. It is caused by tissue damage or inflammation.
- Chronic pain is long-term pain. It may last a few weeks or months or be ongoing. It may be constant or come and go, and it can range from mild to severe. Chronic pain can start as acute pain and then stay beyond the normal expected healing time. It is also called persistent pain.

Pain can also be described based on the part of the body it affects.

- Nerve pain is caused by pressure on the nerves or spinal cord, or by damage to nerves. It may be described as burning or tingling. You may have nerve pain after surgery, radiation therapy or chemotherapy.
- Bone pain develops when cancer spreads to the bone. It may occur in one or more areas of bone. Bone pain is often aching, dull or throbbing.
- Soft tissue pain is caused by damage to an organ or muscle. It is usually described as sharp, aching or throbbing.
- Visceral pain is pain that starts in internal organs such as the intestine or bowel. It is often difficult to describe or find the source of the pain. It is described as colicky or vague and is often linked with other symptoms such as nausea and

sweating.

- Phantom pain is pain or changes in sensation in a body part that has been removed. For example, some people feel pain in an arm or leg that has been amputated or in the breast area after a mastectomy.
- Referred pain is when one part of the body causes pain in another part. For example, a swollen liver can press on nerves and cause pain in the right shoulder.

Acute Pain

Definition: Recent pain that is usually transient in nature lasting for several minutes to several days. Is usually caused by tissue damage and is often associated with some degree of inflammation. The general Approach to the treatment of acute pain includes treatment goals, Therapeutic strategies and elements of pain management.

Management

Management Goals

- Early intervention, with prompt adjustments in the regimen for inadequately controlled pain.
- Reduction of pain to acceptable levels.
- Facilitation of recovery from underlying disease or injury

Common Types of Acute Pain

Type or source	Definition	Source or examples
Acute illness	Pain associated with an acute illness	<ul style="list-style-type: none"> • Appendicitis, renal colic, myocardial infarction
Perioperative (includes postoperative)	Pain in a surgical patient because of pre-existing disease, the surgical procedure (e.g. associated drains, chest or nasogastric tubes, complications) or both	<ul style="list-style-type: none"> • Head and neck surgery • Chest and chest wall surgery • Abdominal surgery • Orthopedic and vascular surgery (back and extremities)
Post traumatic (major trauma)	Includes generalized or regionalized pain due to major acute injury	<ul style="list-style-type: none"> • Motor vehicle accident
Burns	Pain due to thermal or chemical burns	<ul style="list-style-type: none"> • Fire, chemical exposure
Procedural	Pain associated with a diagnostic or therapeutic medical procedure	<ul style="list-style-type: none"> • Bone marrow biopsy, endoscopy, catheter placement, circumcision, chest tube placement, suturing
Obstetrics	Pain related to labor and delivery	<ul style="list-style-type: none"> • Childbirth by vaginal delivery or cesarean section

Management Strategies

- Multimodal analgesia → Use of more than one method or modality of controlling pain.
 - Drugs from two or more classes.
 - Drug plus non drug treatment to obtain additive beneficial effects; reduce side effects, or both. These modalities may operate

through different mechanisms or at different sites (i.e. peripheral versus central actions).

■ Example of multimodal analgesia is the use of various combinations of opioids and local anesthetics to manage postoperative pain.

- Preemptive analgesia → Administration of one or more analgesic(s) prior to a noxious event (e.g. surgery) in an attempt to prevent peripheral and central sensitization, minimizing post-injury pain.

Non-pharmacological

Non-Pharmacological Interventions for Acute Pain.

Pain type or source	Physical methods	Psychological methods	Other
Acute illness	<ul style="list-style-type: none"> • Vibrations or cold for immobilization 	Patient education, relaxation, imagery, distraction	
Perioperative pain	<ul style="list-style-type: none"> • Exercise or immobilisation • Message • Application of heat or cold • Electro analgesia 	Patient education, relaxation, distraction, acupuncture, imagery, bio feedback, hypnosis	Acupuncture
Trauma	<ul style="list-style-type: none"> • Rest, ice, compression, elevation • Physical therapy (e.g. stretching, strengthening, thermal therapy, TENS, vibration) 	Relaxation, hypnosis, distraction, supportive psychotherapy, coping skills training	
Burns	<ul style="list-style-type: none"> • Limb elevation • Minimise number of dress changes 	Patient education, deep relaxation, distraction, imagery, music relaxation	
Procedural	<ul style="list-style-type: none"> • Application of cold (pre and post procedure) • Counter irritation (simple massage, scratching, pressure) • Rest or immobilization (post procedure) 		
Obstetrics		Patient education, relaxation breathing, distraction	

Pharmacological

- A cute pain → Most acute pain is nociceptive and responds to
 - Nonopioids and opioids.
 - A djuvant analgesics (e.g. local anesthetics).
- Mild somatic pain responds well to → Oral non-opioids.
 - Paracetamol.
 - Nonsteroidal Anti-inflammatory drugs [NSAIDs].
- Topical agents (e.g. local anesthetics).

- Physical treatments (e.g. rest, ice, compression, elevation).
- Moderate to moderately severe acute pain is more likely to respond to
- Opioids.
- Non-opioids often combined with opioids to improve pain relief and diminish the risk of side effects.
- Systemic Medication for Acute Pain Management.

with others (e.g. family, friends, health care professionals).

Recommendations

Analgesics, especially opioids should be under prescribed and under dosed for both acute and chronic pain. Moderate to severe acute pain should be treated with sufficient doses of opioids to safely relieve the pain. If drug side effects preclude achieving adequate pain relief, the side effects should be treated and/or another opioid should be tried, the concomitant use of other analgesics (e.g. non-opioids, local anesthetics) and non-pharmacologic methods (e.g. applied heat or cold, electroanalgesia, relaxation) maximizes pain relief and minimizes the risk of treatment-limiting side effects.

Chronic Non Cancer Pain

The general approaches to the treatment of chronic non-cancer pain (CNCP) include treatment goals, therapeutic approaches, and elements of treatment. It also provides general information about the treatment of some common types of CNCP (i.e. summary tables) and identifies relevant clinical practice guidelines (CPGs).

Management

General management goals

- Diminish suffering, including pain and associated emotional distress.
- Increase/restore physical, social, vocational, and recreational function.
- Optimize health, including psychological well-being.
- Improve coping ability (e.g. develop self-help strategies, reduce dependence on health care system) and relationships

Management Strategies

- Multimodal therapy → Medication from different classes (i.e. combination drug therapy).
- Rehabilitative therapies (e.g. physical therapy, occupational therapy) and medication.
- Regional anesthesia (e.g. neural blockade) and medication.
- Interdisciplinary Management of CNCP: An Examples of Interventions is below.

Patient education: counseling about the pain, aggravating and alleviating factors, management strategies, lifestyle factors that may influence the pain (e.g. use of nicotine, alcohol).

Physical rehabilitative approaches: physical therapy modalities for reconditioning, (e.g. walking, stretching, exercises to improve strength and endurance, oscillatory movements).

Other physical approaches: application of heat or cold, TENS, massage, acupuncture. Occupational therapy: attention to proper body mechanics, resumption of normal levels of activities of daily living.

Pharmaceuticals: Nonopioids, opioids, anti-depressants, antiepileptic drugs, stimulants, antihistamines.

Regional anesthesia: Nerve blocks (e.g. diagnostic, somatic, sympathetic, visceral, trigger point) and/or intraspinal analgesia (e.g. opioids, clonidine, baclofen, local anesthetics).

Psychological approaches: relaxation training, hypnosis, biofeedback, copings skills, behavior modification, and psychotherapy.

Surgery: Noeuroablation, neurolysis, micro vascular decompression [1-13].

Pain Type or source	Non Opioid	Opioids	Adjuvant analgesics	Comments
Acute illness	Paracetamol, NSAIDs	Systemic opioids		
Perioperative (includes postoperative)	Paracetamol, NSAIDs	Systemic opioids including PCA	Local anesthetics (Lidocaine, bupivacaine)	Use multimodal whenever possible reorganise needs for special populations, scheduled ATC dosing is usuary preferred to PRN
Major trauma (generalized pain)	Paracetamol, NSAIDs, during post trauma healing phase	Bolus or continous IV opioids during emergency phase; IV or PO opioids during healing phase	IV ketamine (Very rare)	Use of ketamine is restricted to pain refractory to other treatments due to severe CNS side effects
Major trauma (regionalized pain)	NSAIDS (parental, oral during post trauma healing phase)	Bolus or IV opioids during emergency phase plus regional anesthesia	IV ketamine (Very rare)	Use of ketamine is restricted to pain refractory to other treatments due to severe CNS side effects,
Burns	Paracetamol, NSAIDs during rehabilitative phase	High doses of IV opioids (e.g. morphine, Fentanyl± PCA for NPO patients; oral opioids (e.g. morphine, Hydromorphone) when taking PO	Parental ketamine Veryrare IV lidocaine Very rare	Use of ketamine is restricted to pain refractory to other treatments due to severe CNS side effects, Infusion of low dose lidocaine is restricted to burn pain that is refractory to opioids
Minor trauma	Paracetamol, NSAIDS	Opioids for mild to moderate pain		
Procedural pain	NSAIDS for preemptive analgesia and post procedural pain	IV opioids (morphine, hydromorphone and fentanyl)	Local anesthetics (lidocaine, Bupivacaine, IV ketamine	Local anesthetics may be applied topically or injected into the tissue or used for nerve blocks. Use of ketamine limited by severe CNS side effects
Obstetrics Pain		Bolus IV opioids (morphine, fentanyl and hydromorphone		

Non-pharmacological

Non-pharmacological Interventions for Chronic Noncancer Pain

Type of pain	Surgical	Other physical methods	Psychological methods	Other
Arthritis pain	Includes arthroscopy, synovectomy, osteotomy and spinal fusion	TENS, applied heat or cold, low impact aerobic and ROM exercise, joint protection (splint or brace, massage)	PE, (rest, exercise, nutrition), and social support	Acupuncture nutritional supplements
Low back pain	Laminectomy, discectomy, lumbar fusion, lumbar stabilisation	SCS, cryoanalgesia, radiofrequency, coagulation, exercise, PT,OT,TENS, brace, vibration	PE 'back school' Biofeedback, psychotherapy	Acupuncture manipulation therapy
Fibromyalgia		Applied heat massage, gentle aerobic, gentle aerobic and stretching, attention to proper posture, PT, TENS, vibration	PE, psychotherapy, relaxation, hypnosis	Acupuncture
Sickle cell disease		Careful hydration, applied heat, massage, ultra sound, PT, TENS, possibly SCS, applied heat or cold, massage	PE, psychotherapy, deep breathing and relaxation techniques, distraction, imagery, meditation, biofeedback	Acupuncture
Peripheral neuropathy	Decompressive surgery for nerve entrapment, vascular surgery for vascular insufficiency	Good skin and foot care, PT, TENS	PE, psychotherapy, relaxation, biofeedback	
Migraine and other types of headache		Applied heat or cold, exercise (prophylaxis), vibration	PE, relaxation, biofeedback	

Pharmacological

Pharmacological Management for Chronic Noncancer Pain: (Selected Examples)

Type of pain	Non opioids	Opioids	Adjuvant Analgesics and disease-specific drugs	Comments
Arthritis pain	<ul style="list-style-type: none"> • Paracetamol • NSAIDs • Selective COX-2 inhibitors 	Short term opioid for flare-ups	Corticosteroids	Select NSAIDS based on dosing, efficiency, tolerance, costs and patient preference Monitor closely for NSAIDs side effects Opioids are appropriate for long term treatment in selected patients
Low back pain	<ul style="list-style-type: none"> • Paracetamol • NSAIDs • Selective COX-2 inhibitors 	Short term opioid for mild to moderate flare -ups	TCA e.g. Amitriptyline AEDs e.g. gabapentine, carbamazapine Short acting Muscle relaxants e.g. cyclobenzaprine	Opioids are appropriate for long term treatment in selected patients
Fibromyalgia	<ul style="list-style-type: none"> • Paracetamol • NSAIDs • Selective COX-2 inhibitors 	Opioids (occasional use for "flares") Tramadol	TCA e.g. Amitriptyline Short acting Muscle relaxants eg cyclobenzaprine	Tramadol may have less potential for abuse
Sickle cell disease pain	<ul style="list-style-type: none"> • Paracetamol • NSAIDs 	Short or long term opioids	Sedatives Anxiolytics	Use short acting opioids for short term treatment and long acting for long treatment
Peripheral neuropathy	<ul style="list-style-type: none"> • Paracetamol • NSAIDs 	Short term opioids only	TCA e.g. Amitriptyline AEDs e.g. gabapentine, carbamazapine Short acting muscle relaxants e.g. cyclobenzaprine	AEDs, TCAs and local anesthetics are first line treatment NSAIDs are really effective try opioids as last resort

Methodology

Definition

The research talks about pain management in prehospital (scene and ambulance) and how to improvement or relieve the pain when caring the patient from paramedic before arrives to hospital.

Type of research

Prospective

Time: from 19/5/1437 H – 28/2/2016, Research question: Are prehospital patient in emergency ambulance are under treated for pain?

Data collection: The type of data collection is questionnaire.

Population:

The emergency patients that arrived to hospital by ambulance are

Including criteria: Adult – concious – cooperative.

Excluding criteria: pediatric – unconcious – uncooperative.

Number of cases in:

Alnoor hospital:

King faisal hospital:

King abdulaziz hospital:

Obstetrics hospital:

Questionnaire

Name/

Sex/ M

Age/

Nationality/

Date/

Time/

Conscious/ Yes NO

TRAUMA MEDICAL

Chronic pain Acute pain

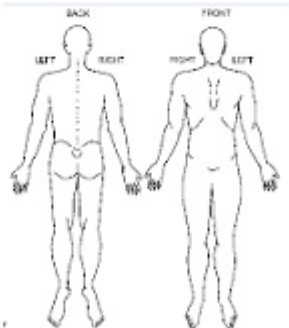
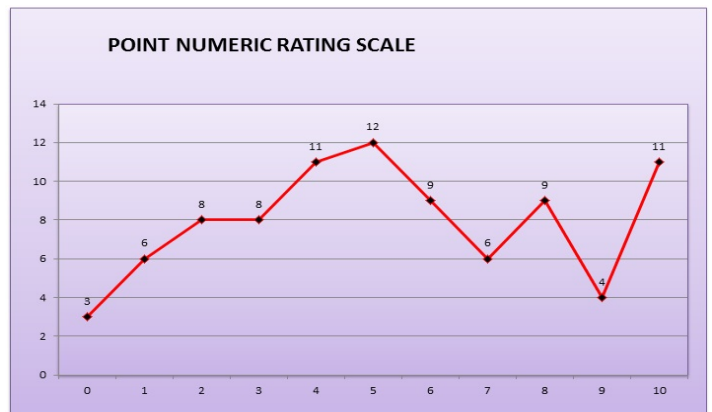
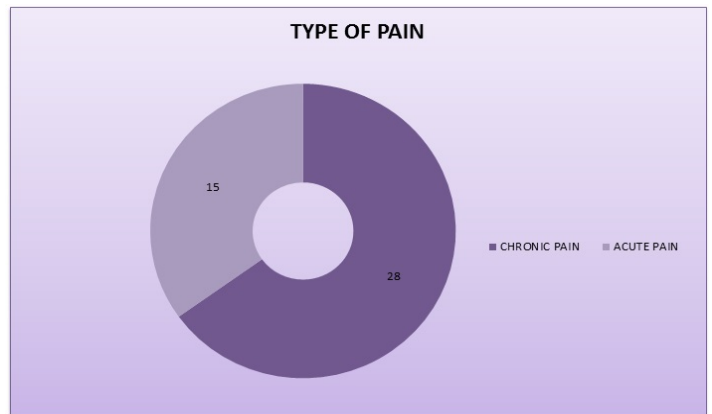
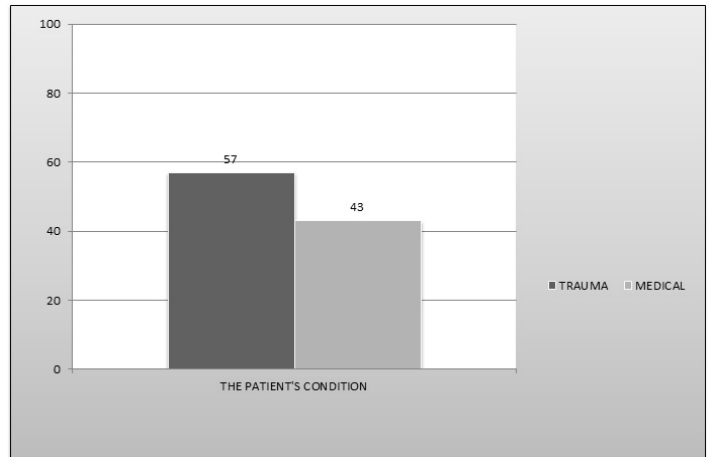
The description/

Intervention/

Point Numeric Rating Scale (NRS)
Displayed horizontally

0 1 2 3 4 5 6 7 8 9 10

▲ NO PAIN ▲ MODERATE PAIN ▲ WORST POSSIBLE

The percentages of patients who felt pain is:

* 0 – 3 = 28.7 %

* 4 – 7 = 43.7 %

* 8 – 10 = 27.6 %

The percentages of patient's condition:

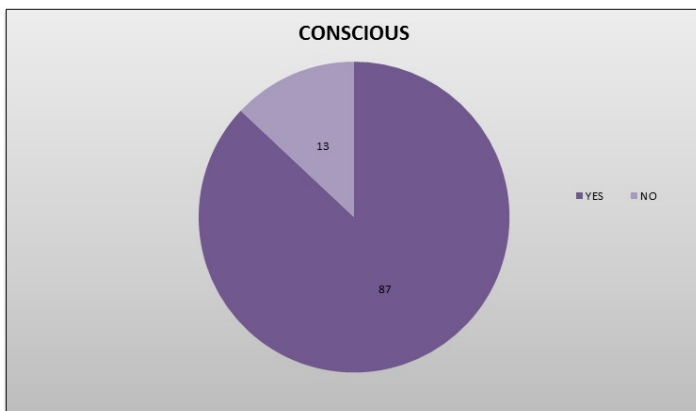
Medical: 57 %

Trauma: 43 %

The percentages of patients:

Acute pain: 34.9 %

Chronic pain: 65.1 %



Conclusion

Are prehospital patient in emergency ambulance are under treated for pain?

No, the patient did not take enough care.

Recommendation

The paramedics that work in Saudi Red Crescent should train more about drugs administration. We suggest for Saudi Red Crescent to give their EMT the permission to give drugs. Spread pain management awareness to the community.

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