Postoperativa smärtlindring i framtiden – vad nytt?

SwERAS möte Stockholm 21118-19

Peter Dahm, Överläkare, Med. Dr.
Verksamhetschef, An-Op-IVA, område 5
Sahlgrenska Universitetssjukhuset

VÄSTRA GÖTALANDSREGIONEN
SAHLGRENSKA UNIVERSITETSSJUKHUSET

Nyheter?

Vad tänker ni på?

Ta en minut och diskutera ”3 och 3” i bikupa

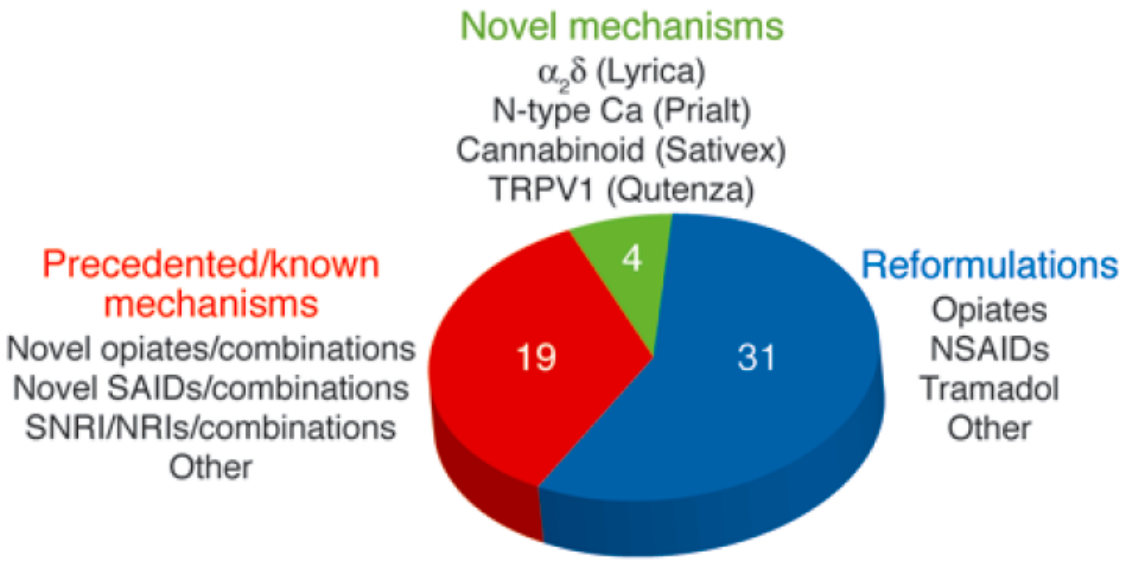

Figure 1

Analgesic launches from 1990 to 2010. The majority of new drug launches were reformulations of existing pharmaceuticals. NRI, norepinephrine reuptake inhibitor; SAIDs, steroidal antiinflammatory drugs; SNRI, serotonin-norepinephrine reuptake inhibitor.

Dinalbuphine i.m. injektion - 7 dgr smärtlindring

Journal of Pain Research

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CLINICAL TRIAL REPORT

Preoperative Administration of Extended-Release Dinalbuphine Sebacate Compares with Morphine for Post-Laparoscopic Cholecystectomy Pain Management: A Randomized Study

This article was published in the following Dove Press journal:
Journal of Pain Research

Sing-Ong Lee[1]
Li-Ping Huang[1]
Chih-Shung Wong[1–3]

[1]Department of Anesthesiology, Cathay General Hospital, Taipei, Taiwan; [2]Graduate Institute of Medical Science, National Defense Medical Center, Taipei, Taiwan; [3]School of Medicine, Fu-Jen Catholic University, New Taipei, Taiwan

Purpose: Perioperative pain management plays a critical role in the effort to promote enhanced recovery after surgery (ERAS). Pain is also the most concern for patients after laparoscopic cholecystectomy (LC). Naldebain (extended-release dinalbuphine sebacate, DS) is an oil-based formulation for intramuscular injection that has been designed for extended release and can be used for preoperative analgesia over a 7-day period. This study was aimed to compare the efficacy of DS injection with that of regular postoperative morphine administered when necessary for the management of post-laparoscopic cholecystectomy pain.

Patients and Methods: Forty-four patients scheduled for elective laparoscopic cholecystectomy were included in this prospective study. The patients were allocated randomly into two groups, with equal numbers receiving preoperative DS versus post-operative morphine. A total of 21 and 22 patients completed the study within the preoperative DS and post-operative morphine group, respectively.

Results: There were no statistically significant differences between two treatment groups with respect to length of surgery, anesthetics used during operation, or the average visual analog scale pain score in the post-operative anesthesia care unit (PACU), and at 4, 24, 48, and 72 hours post-procedure. Morphine was required only during the first postoperative day among those in the DS group. Safety was comparable in both DS and morphine groups.

Conclusion: A single preoperative dose of DS provides sufficient analgesia along with a manageable safety profile and no interference with surgical anesthetics when compared to control cases that underwent surgery without preoperative DS treatment. This pilot study suggests that preoperative administration of DS is safe and may decrease the need for postoperative opioid use after laparoscopic cholecystectomy.

Registration: ClinicalTrials.gov Identifier: NCT03713216.

Keywords: nalbuphine, enhanced recovery after surgery, multimodal analgesia, preventive analgesia

Introduction

Appropriate perioperative pain management is critical factor in the effort to achieve enhanced recovery after surgery (ERAS).[1] Although various analgesics had been studied for postoperative pain management, opioids remain the mainstay in most clinical settings.[2] Opioid administration results in numerous adverse effects, including pruritus, constipation, and respiratory depression.[3] Multimodal opioid-sparing regimens have been devised to address concerns associated with high dose-opioid

Correspondence: Chih-Shung Wong
Department of Anesthesiology, Cathay General Hospital, #280, Renai Road, Section 4, Taipei, Taiwan
Tel +886-2-27082121 Ext 3510
Fax +886-2-87924835
Email w82556@gmail.com

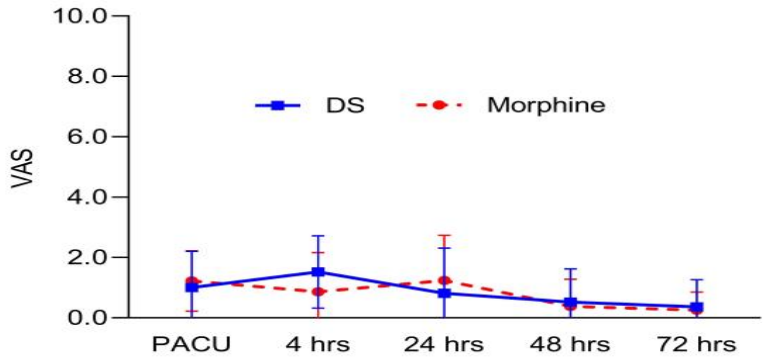


Figure 2 Pain scores over time from PACU to 72 hours after the procedure.

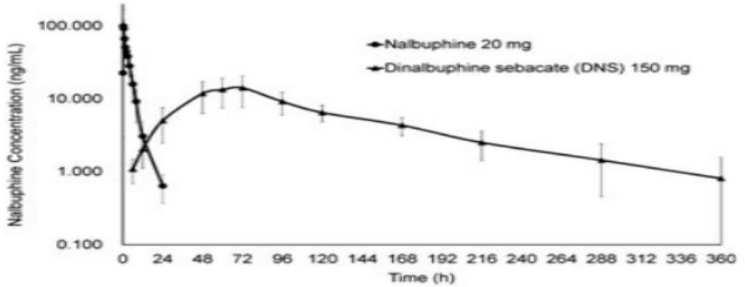
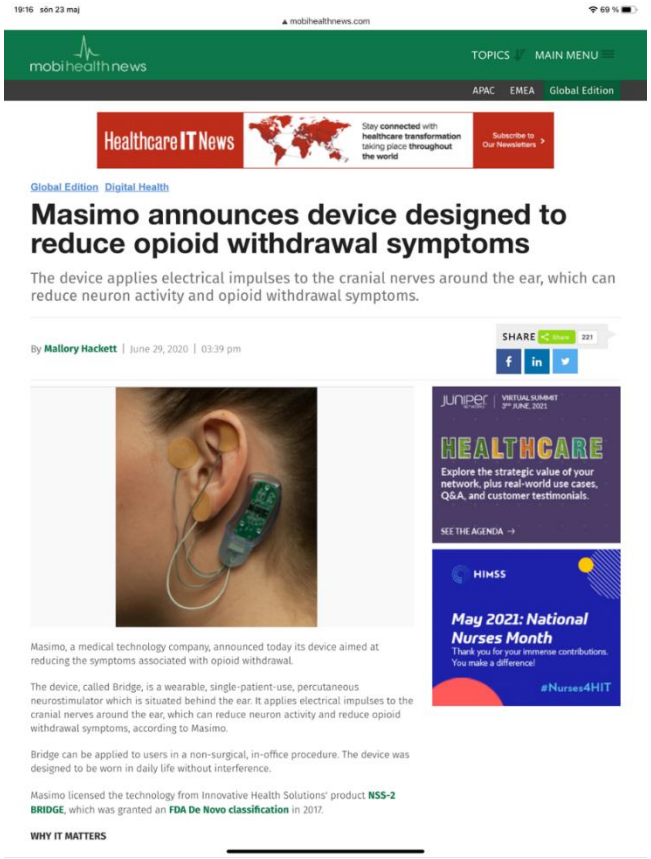


FIGURE 1 Comparison of mean nalbuphine (± SD) whole blood concentration–time profiles after clinical subjects received nalbuphine HCl (period I) and DNS (period II)

Mot opioid abstinens



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TOPICS MAIN MENU

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Healthcare IT News

Global Edition Digital Health

Masimo announces device designed to reduce opioid withdrawal symptoms

The device applies electrical impulses to the cranial nerves around the ear, which can reduce neuron activity and opioid withdrawal symptoms.

By Mallory Hackett | June 29, 2020 | 03:39 pm

SHARE

Masimo, a medical technology company, announced today its device aimed at reducing the symptoms associated with opioid withdrawal.

The device, called Bridge, is a wearable, single-patient-use, percutaneous neurostimulator which is situated behind the ear. It applies electrical impulses to the cranial nerves around the ear, which can reduce neuron activity and reduce opioid withdrawal symptoms, according to Masimo.

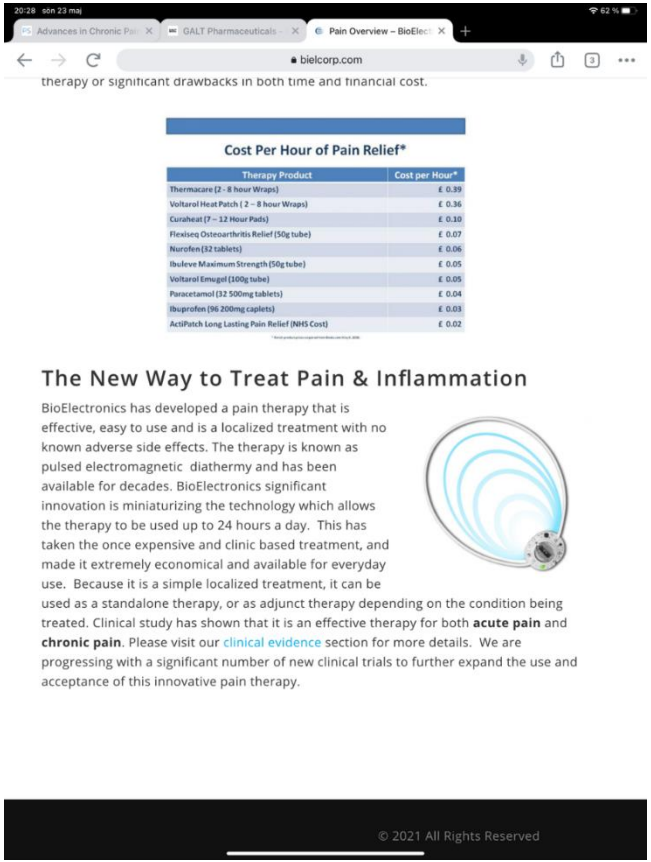
Bridge can be applied to users in a non-surgical, in-office procedure. The device was designed to be worn in daily life without interference.

Masimo licensed the technology from Innovative Health Solutions' product **NSS-2 BRIDGE**, which was granted an **FDA De Novo classification** in 2017.

WHY IT MATTERS

Elektrisk stimulering

Elektriskt plåster mot smärta och inflammation



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therapy or significant drawbacks in both time and financial cost.

Cost Per Hour of Pain Relief*

Therapy Product	Cost per Hour*
Thermacare (2 - 8 hour Wraps)	£ 0.39
Voltarol Heat Patch (2 - 8 hour Wraps)	£ 0.36
Curaheat (7 – 12 Hour Pads)	£ 0.10
Flexiseq Osteoarthritis Relief (50g tube)	£ 0.07
Nurofen (32 tablets)	£ 0.06
Ibuleve Maximum Strength (50g tube)	£ 0.05
Voltarol Emugel (100g tube)	£ 0.05
Paracetamol (32 500mg tablets)	£ 0.04
Ibuprofen (96 200mg caplets)	£ 0.03
ActiPatch Long Lasting Pain Relief (NHS Cost)	£ 0.02

The New Way to Treat Pain & Inflammation

BioElectronics has developed a pain therapy that is effective, easy to use and is a localized treatment with no known adverse side effects. The therapy is known as pulsed electromagnetic diathermy and has been available for decades. BioElectronics significant innovation is miniaturizing the technology which allows the therapy to be used up to 24 hours a day. This has taken the once expensive and clinic based treatment, and made it extremely economical and available for everyday use. Because it is a simple localized treatment, it can be used as a standalone therapy, or as adjunct therapy depending on the condition being treated. Clinical study has shown that it is an effective therapy for both **acute pain** and **chronic pain**. Please visit our clinical evidence section for more details. We are progressing with a significant number of new clinical trials to further expand the use and acceptance of this innovative pain therapy.

Journal of Pain Research

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ORIGINAL RESEARCH

Antinociceptive Effect of the Citrus Flavonoid Eriocitrinon Postoperative Pain Conditions

This article was published in the following Dove Press journal:
Journal of Pain Research

Saad Alghamdi

Laboratory Medicine Department, Faculty of Applied Medical Sciences, Umm Al-Qura University, Makkah 21955, Saudi Arabia

Background: Postoperative pain remains a major clinical problem as there are limited analgesic strategies that have been proven to be effective in preventing and relieving this type of pain. Natural products, including flavonoids, have distinct pharmacological properties and play an important role in the discovery of analgesic drugs.

Materials and Methods: In this study, the flavonoid eriocitrin (eriodictyol 7-*O*-rutinoside), which is the main flavonoid in lemon fruit (*Citrus limon*), was mechanistically investigated for its prospective antinociceptive effect in a mouse model of postoperative pain. The antinociceptive property was evaluated by utilizing both tonic (acetic acid-induced writhing behavior) and phasic (hot-plate) nociception modalities. The hindpaw incisional surgery was performed and hyperalgesia was assessed using von Frey filaments.

Results: The tested doses of eriocitrin significantly attenuated ($P<0.01$, $P<0.001$) the chemically-induced tonic visceral nociception (5, 10, 15, and 30 mg/kg) and acute phasic thermal nociception (10, 15, and 30 mg/kg). A significant dose-dependent reduction in the incisional nociceptive hyperalgesia was exhibited by eriocitrin, with a marked antinociception observed at doses of 15 mg/kg ($P<0.05$ during 30–60 minutes) and 30 mg/kg ($P<0.05$, $P<0.01$ during 30–120 minutes).

Conclusion: The antinociceptive effect of eriocitrin (30 mg/kg) was strongly blocked by the antagonists of the opioid receptor, naltrexone, and $GABA_A$ receptor, bicuculline, thereby suggesting the involvement of opioidergic and GABAergic mechanisms in the nociception, reducing proclivity of eriocitrin during transmission of incisional nociception. These results concluded that eriocitrin has a potent antinociceptive effect in postoperative pain conditions, probably mediated through opioid and $GABA_A$ receptors.

Keywords: flavanones, surgical pain, analgesia, incisional pain, natural products

Introduction

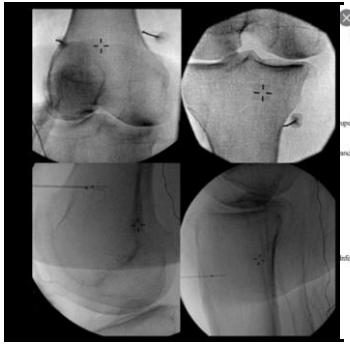
Postoperative pain occurs following burn excision and/or grafting procedures and is most commonly the result of increased pain from newly-created wounds at the skin graft harvesting site.[1] Postoperative pain may occur all over the body, including joints and muscles, head, and limbs, and is accompanied by restlessness, insomnia, sweating or lack of sweating, fatigue, poor appetite, or even dysfunction of the limbs.[2] Various mechanisms have been identified for mediation of postoperative pain, which include the role of certain receptors, mediators, and neurotransmitters involved in the peripheral and central sensitization after incision.[3] Poorly managed postoperative pain can lead to complications and prolonged rehabilitation. Uncontrolled acute pain is associated with the development of chronic pain, with a reduction in quality-of-life.[4]

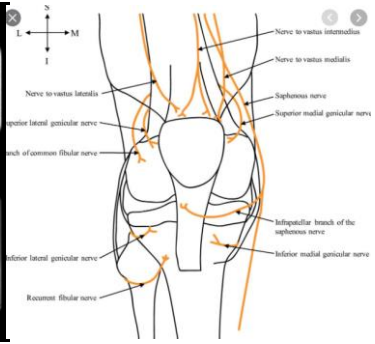
Correspondence: Saad Alghamdi
Laboratory Medicine Department, Faculty of Applied Medical Sciences, Umm Al-Qura, University, PO Box 715, Makkah 21955, Saudi Arabia
Tel +966 505502114
Email ssalghamdi@uqu.edu.sa

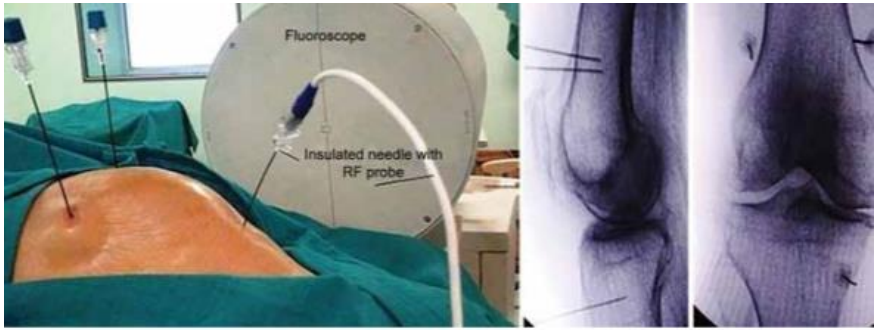
Citron Flavonoid postoperativt?

Radiofrekvens terapi?


Genicular Nerve Pulsed Dose Radiofrequency (PDRF) Compared to Intra-Articular and Genicular Nerve PDRF in Knee Osteoarthritis Pain: A Propensity Score-Matched Analysis







Kombinationspreparat Paracetamol och Ibuprofen

BDJ

Practice | Published: 11 November 2011

Relative efficacy of oral analgesics after third molar extraction – a 2011 update

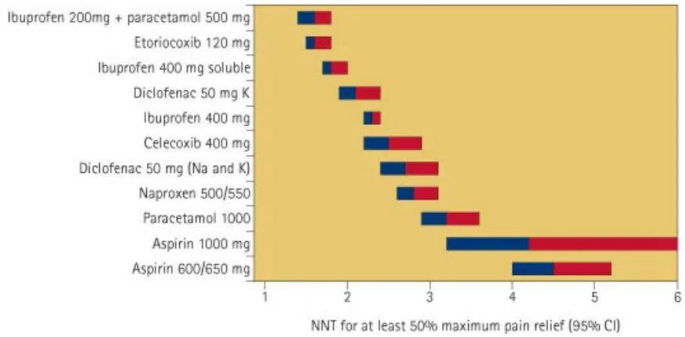
S. Derry, P. J. Wiffen & R. A. Moore

British Dental Journal **211**, 419–420(2011) | Cite this article

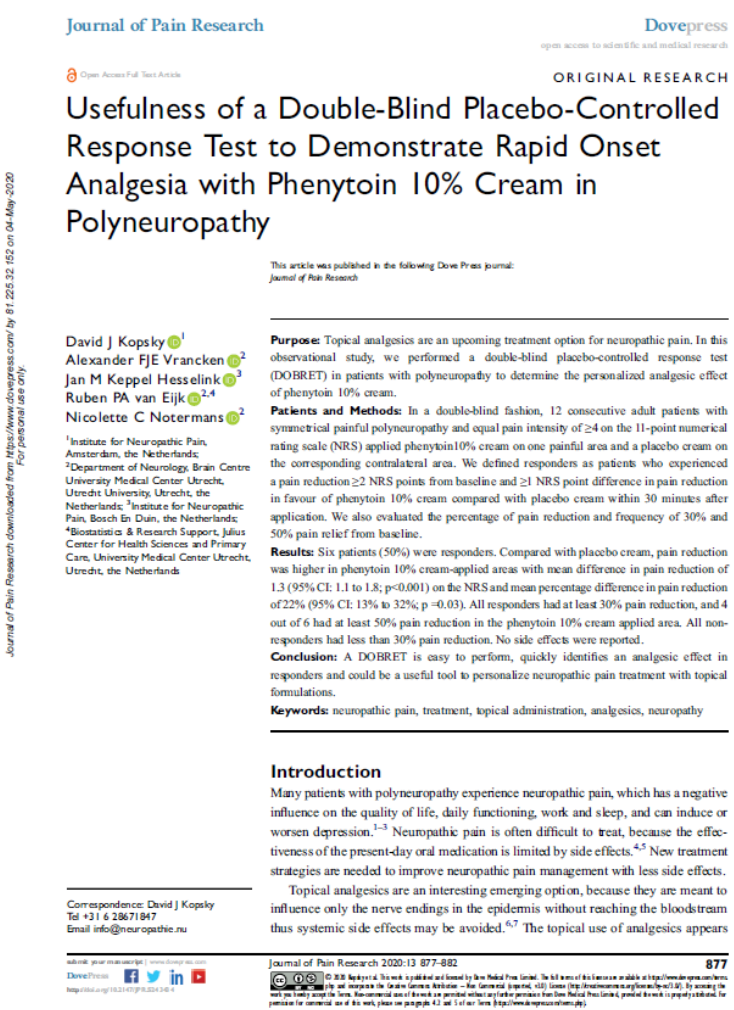
155 Accesses | **17** Citations | **10** Altmetric | Metrics

Figure 1

From: Relative efficacy of oral analgesics after third molar extraction – a 2011 update



NNTs in dental pain studies for a range of commonly used analgesics



Journal of Pain Research

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ORIGINAL RESEARCH

Usefulness of a Double-Blind Placebo-Controlled Response Test to Demonstrate Rapid Onset Analgesia with Phenytoin 10% Cream in Polyneuropathy

This article was published in the following Dove Press journal:
Journal of Pain Research

David J Kopsky[1]
Alexander FJE Vrancken[2]
Jan M Keppel Hesselink[3]
Ruben PA van Eijk[2,4]
Nicolette C Notermans[2]

[1]Institute for Neuropathic Pain, Amsterdam, the Netherlands; [2]Department of Neurology, Brain Centre University Medical Center Utrecht, Utrecht University, Utrecht, the Netherlands; [3]Institute for Neuropathic Pain, Bosch En Duin, the Netherlands; [4]Biostatistics & Research Support, Julius Center for Health Sciences and Primary Care, University Medical Center Utrecht, Utrecht, the Netherlands

Purpose: Topical analgesics are an upcoming treatment option for neuropathic pain. In this observational study, we performed a double-blind placebo-controlled response test (DOBRET) in patients with polyneuropathy to determine the personalized analgesic effect of phenytoin 10% cream.

Patients and Methods: In a double-blind fashion, 12 consecutive adult patients with symmetrical painful polyneuropathy and equal pain intensity of ≥4 on the 11-point numerical rating scale (NRS) applied phenytoin10% cream on one painful area and a placebo cream on the corresponding contralateral area. We defined responders as patients who experienced a pain reduction ≥2 NRS points from baseline and ≥1 NRS point difference in pain reduction in favour of phenytoin 10% cream compared with placebo cream within 30 minutes after application. We also evaluated the percentage of pain reduction and frequency of 30% and 50% pain relief from baseline.

Results: Six patients (50%) were responders. Compared with placebo cream, pain reduction was higher in phenytoin 10% cream-applied areas with mean difference in pain reduction of 1.3 (95% CI: 1.1 to 1.8; p<0.001) on the NRS and mean percentage difference in pain reduction of 22% (95% CI: 13% to 32%; p =0.03). All responders had at least 30% pain reduction, and 4 out of 6 had at least 50% pain reduction in the phenytoin 10% cream applied area. All non-responders had less than 30% pain reduction. No side effects were reported.

Conclusion: A DOBRET is easy to perform, quickly identifies an analgesic effect in responders and could be a useful tool to personalize neuropathic pain treatment with topical formulations.

Keywords: neuropathic pain, treatment, topical administration, analgesics, neuropathy

Introduction

Many patients with polyneuropathy experience neuropathic pain, which has a negative influence on the quality of life, daily functioning, work and sleep, and can induce or worsen depression.[1–3] Neuropathic pain is often difficult to treat, because the effectiveness of the present-day oral medication is limited by side effects.[4,5] New treatment strategies are needed to improve neuropathic pain management with less side effects.

Topical analgesics are an interesting emerging option, because they are meant to influence only the nerve endings in the epidermis without reaching the bloodstream thus systemic side effects may be avoided.[6,7] The topical use of analgesics appears

Correspondence: David J Kopsky
Tel +31 6 28671847
Email info@neuropathie.nu

Phenytoin kräm mot polyneuropaty

Postoperativt förebyggande?

PAIN® 154 (2013) 1613–1621

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One night of total sleep deprivation promotes a state of generalized hyperalgesia: A surrogate pain model to study the relationship of insomnia and pain

Sigrid Schuh-Hofer [a,b,*], Rachel Wodarski [c], Doreen B. Pfau [a], Ombretta Caspani [a], Walter Magerl [a], Jeffrey D. Kennedy [d], Rolf-Detlef Treede [a]

[a] Institute of Neurophysiology, Centre of Biomedicine and Medical Technology Mannheim, Heidelberg University, 68167 Mannheim, Germany
[b] Zentrum für Neurologie, Abteilung Epileptologie, Universitätsklinikum Tübingen der Eberhard Karls Universität, Germany
[c] Eli Lilly & Company, Erl Wood Manor, Windlesham, Surrey GU2 06PH, UK
[d] Eli Lilly & Company, Indianapolis, IN, USA

Sponsorships or competing interests that may be relevant to content are disclosed at the end of this article.

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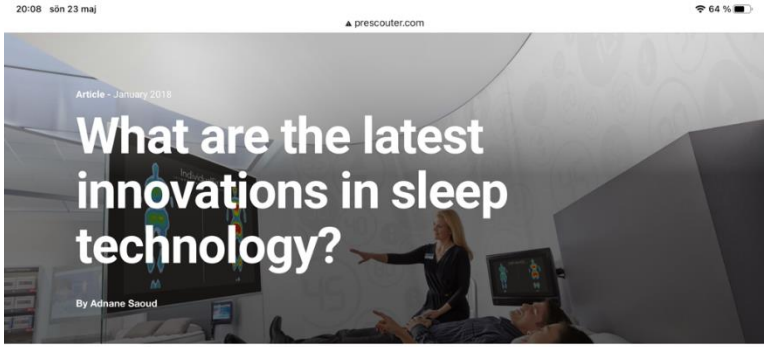
ABSTRACT

Sleep disturbances are highly prevalent in chronic pain patients. Understanding their relationship has become an important research topic since poor sleep and pain are assumed to closely interact. To date, human experimental studies exploring the impact of sleep disruption/deprivation on pain perception have yielded conflicting results. This inconsistency may be due to the large heterogeneity of study populations and study protocols previously used. In addition, none of the previous studies investigated the

Störd nattsömn kan ge generell hyperalgesi

Sovmiljö postoperativt:
- ljud, ljus, doft, rörelse



A good night's sleep is one of the key elements for good health. In fact, good sleep has been proven to have many health benefits, such as improving concentration and productivity, maximizing athletic performance and even decreasing the risk of cardiovascular diseases and strokes. As many people are now sleeping less, and sleep quality has decreased as well, many companies are busy developing sleep aid technologies. Here, we go over some of the latest innovations in sleep technology.

Beddit's sleep sensor:

Beddit is a sleep sensor composed of a thin rectangle that is placed under your sheets. From there, it monitors numerous parameters such as sleep, including different sleep stages, heart rate, respiration rate, and more. It has some of the best sensors on the market, and it even connects to your Nest to help tweak your environment for better sleep. You don't have to turn it on every night, just go to bed and trust that it will be monitoring. It also connects to your smartphone, so you can upload your data and let your doctor know how you're sleeping.

Sleep Number's smart bed:

Sleep Number introduced a revolutionary new product in 2017, the Sleep Number 360™ smart bed, which is the most significant innovation in the company's 30-year history. This smart bed can sense and automatically adjust its settings to keep both partners sleeping soundly throughout the night. It automatically adjusts to your sleep position in real-time, gently contouring to side, back or stomach profiles to make you comfortable. It also detects snoring and adjusts the position of a snorer

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CASE REPORT

Combining Transcranial Direct Current Stimulation and Transcutaneous Electrical Nerve Stimulation to Relieve Persistent Pain in a Patient Suffering from Complex Regional Pain Syndrome: A Case Report

This article was published in the following Dove Press journal:
Journal of Pain Research

Francis Houde[1–3]
Marie-Philippe Harvey[1,3]
Pierre-François Tremblay Labrecque[1,3]
Francis Lamarche[1,3]
Alexandra Lefebvre[1,3]
Guillaume Leonard[1,2]

[1]Research Center on Aging, CIUSSS de l'Estrie - CHUS, Université de Sherbrooke, Sherbrooke, Québec, Canada; [2]Research Center of the Centre hospitalier universitaire de Sherbrooke (CHUS), CIUSSS de l'Estrie – CHUS, Université de Sherbrooke, Sherbrooke, Québec, Canada; [3]Faculté de Médecine et des Sciences de la Santé, Université de Sherbrooke, Québec, Canada

Purpose: Complex regional pain syndrome (CRPS) is a rare neuropathic pain condition characterized by sensory, motor and autonomic alterations. Previous investigations have shown that transcranial direct current stimulation (tDCS) and transcutaneous electrical nerve stimulation (TENS) can alleviate pain in various populations, and that a combination of these treatments could provide greater hypoalgesic effects. In the present case report, we describe the effect of tDCS and TENS treatment on pain intensity and unpleasantness in a patient suffering from chronic CRPS.

Results: The patient was a 37-year-old woman, suffering from left lower limb CRPS (type I) for more than 5 years. Despite medication (pregabalin, tapentadol, duloxetine), rehabilitation treatments (sensorimotor retraining, graded motor imagery) and spinal cord stimulation (SCS), the participant reported moderate to severe pain. Treatments of tDCS alone (performed with SCS turned off during tDCS application, 1 session/day, for 5 consecutive days) did not significantly decrease pain. Combining tDCS with TENS (SCS temporarily turned off during tDCS, 1 session/day, for 5 consecutive days) slightly reduced pain intensity and unpleasantness.

Discussion: Our results suggest that combining tDCS and TENS could be a therapeutic strategy worth investigating further to relieve pain in chronic CRPS patients. Future studies should examine the efficacy of combined tDCS and TENS treatments in CRPS patients, and other chronic pain conditions, with special attention to the cumulative and long-term effects and its effect on function and quality of life.

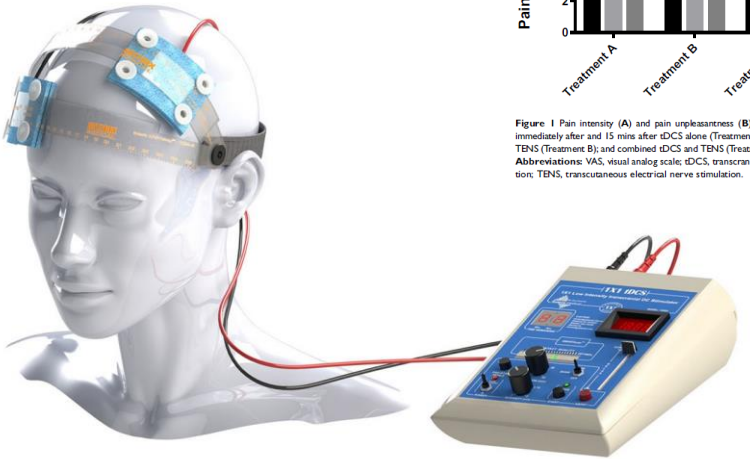
Keywords: chronic pain, neuropathic pain, electrotherapy, peripheral electrical stimulation, peripheral nerve stimulation, non-invasive brain stimulation

Introduction

Complex regional pain syndrome (CRPS) is a rare neuropathic pain condition, characterized by sensory, motor and autonomic alterations, which typically occur following an injury.[1–4] CRPS is characterized by continuous and disproportionate pain relative to the initial event and can be subdivided into two categories, based on the absence (type I) or presence (type II) of a peripheral nerve lesion.[3,6] The exact pathogenesis of CRPS remains elusive, even though growing evidences suggest that many factors (including neurogenic inflammation, autonomic dysregulation and maladaptive neuroplasticity) are implicated in this painful disorder.[4,7–9] Unfortunately, at this point, no

Correspondence: Guillaume Leonard
Centre de recherche sur le vieillissement, CIUSSS de l'Estrie - CHUS, 1036, rue Belvédère Sud, Sherbrooke, Québec J1H 4C4, Canada
Tel +1 (819) 829-7131 ext. 45246
Fax +1 (819) 820-6864
Email guillaume.leonard2@usherbrooke.ca

Transcranial Direct Current (TDC) Stimulation på CRPS patient



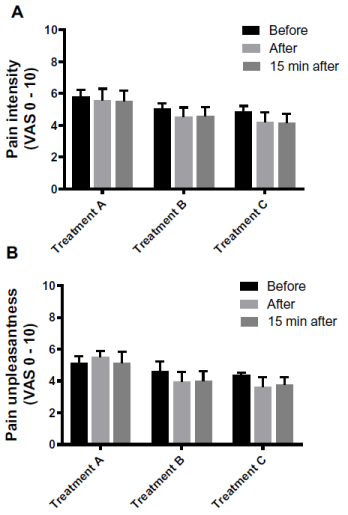


Figure 1 Pain intensity (**A**) and pain unpleasantness (**B**) scores obtained before, immediately after and 15 mins after tDCS alone (Treatment A); combined tDCS and TENS (Treatment B); and combined tDCS and TENS (Treatment C – 6 months later).
Abbreviations: VAS, visual analog scale; tDCS, transcranial direct current stimulation; TENS, transcutaneous electrical nerve stimulation.

svt NYHETER Nyheter Lokalt Sport SVT Play Barn

ÖREBRO

I klippet förklarar Alexandra Ullsten skillnaden i effekt mellan inspelad sång och om föräldrarna sjunger för barnet. Foto: Christine Olsson TT/Sophie Olsson Rahlén SVT

Vaggvisor lugnar spädbarn vid provtagning

UPPDATERAD 31 DECEMBER 2019 · PUBLICERAD 31 DECEMBER 2019

Sången gör att barnen andas lugnare och det finns en trend till färre stick med vaggsång än utan. Alexandra Ullstens avhandling är den första i sitt slag både nationellt och internationellt.

– Alla spädbarn har rätt till en grundläggande smärtlindring och det fick de även i min studie. Men vi lade till en musikterapeut som sjöng före under och efter blodprovet, säger Alexandra Ullsten.

Den 13 december disputerade hon vid Örebro universitet med avhandlingen "Singing, sharing, soothing. Family-centred music therapy during painful procedures in neonatal care". I den kliniska delen kunde hon visa att musikterapeutens sång lugnade. Men analysen kunde inte visa att barnen fick mindre ont.

Föräldrarna nyckeln till smärtlindring

Alexandra Ullsten delar sin tid mellan Örebro universitet och Centralsjukhuset i Karlstad där hon arbetar som musikterapeut. En yrkesroll som kan hjälpa stressade och oroliga föräldrar att sjunga för spädbarnet som vårdas på sjukhus. För avhandlingen visar att just föräldrarna spelar en avgörande roll när det gäller att smärtlindra barnet.

– Kombinationen av att en förälder sjunger, vaggar och stryker på sitt barn och har det hud mot hud stimulerar alla sinnen hos barnet. Det gör att det kommer till ro och kanske upplever situationen mindre hotfull och blodprovet mindre smärtsamt, säger Alexandra Ullsten.

Dela Dela

Sophie Olsson Rahlen

Uppdaterad 31 december 2019 kl 08:09

Publicerad 31 december 2019 kl 05:00

Hittat fel i texten? Skriv och berätta.

Robot säl till dementa postoperativt?

Journal of Pain Research

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ORIGINAL RESEARCH

Management of acute pain in dementia: a feasibility study of a robot-assisted intervention

This article was published in the following Dove Press journal:
Journal of Pain Research

Manon Demange[1,2]
Maribel Pino[1,2]
Hélène Kerhervé[1,2]
Anne-Sophie Rigaud[1,2]
Inge Cantegreil-Kallen[1,2]

[1]Department of Geriatrics, Broca Hospital, Assistance Publique-Hôpitaux de Paris, Paris, France; [2]Research Team 4468, Paris Descartes University, Paris, France

Background: The management of pain is particularly challenging in patients with moderate to severe dementia owing to the loss of communication ability or underlying causes such as behavioral symptoms. It is often associated with health care professionals' frustration and feeling of helplessness. The present study determined a framework and examined the feasibility of an innovative intervention using the PARO® robot for the management of acute pain in dementia.

Method: A mixed-methods research design combining qualitative (five focus groups) and quantitative (questionnaire survey) approaches was used to define the intervention framework. We recruited 57 health care professionals from various medical and paramedical specialties (eg, nursing auxiliaries, nurses, physicians, psychologists) and with expertise in gerontology. The feasibility of the intervention was subsequently assessed with 12 patients suffering from dementia in painful situations to validate the procedure.

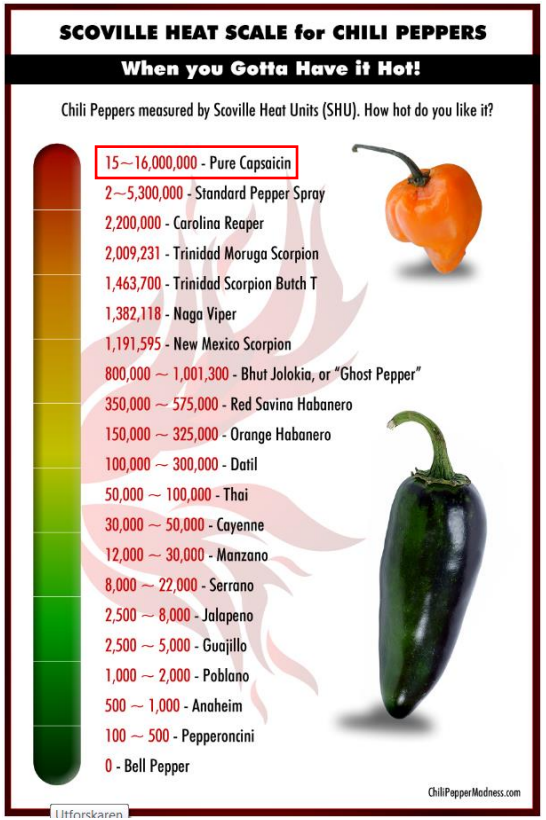
Figure 1 PARO® robot seal.

Injektion Capsaicin

- TRPV-1 agonist, en alkaloid, finns i chilipeppar
  - Påverkar mest C-fiber = tömmer ut Substans P som ger brännande känsla
  - Påverkar INTE A-δ eller A-β fiber, dvs påverkar inte temperatur eller beröring

- **Kräm, Plåster** respektive Capsina® & Qutenza®

- **Injektion Capsaicin**, inga kommersiella läkemedel än…..
  - Fas 3 studie
    - Postop: Knä & Höftprotes, artroscopi axel, inguinal bråck
    - Långvarig: Artros, muskeloskelettal smärta, neuropatisk smärta
  - Fördel att ge L.A. blockad innan injektion, pga smärta!



LAT-gel: Lidokain-Adrenalin-Tetrakain

Läkartidningen

START AKTUELLT KLINIK & VETENSKAP OPINION LÄKARKARRIÄR OM OSS

OPINION - START DEBATT INLEDARE SIGNERAT BLOGG

SENASTE SLF student kritiska mot lärosätenas lämplighetskontroll

KONTAKT SKRIV PRENUMERERA ANNONSERA LT ARRANGERAR

DEBATT

Ny gel kan konkurrera ut lidokaininjektion på barnakuten

Läkartidningen 190508

Cecilia Fahnehjelm, leg läkare
cecilia.fahnehjelm@sll.se

Nicolina Söderlind, leg läkare
nicolina.soderlind@sll.se

Pia Malmquist, överläkare, specialist i akutsjukvård och kirurgi, funktionsenhetschef; samtliga barnakutmottagningen, Astrid Lindgrens barnsjukhus, Solna

CITERAS SOM:
Läkartidningen. 2019;116:FM6I
Läkartidningen 19-20/2019
Lakartidningen.se 2019-05-08

1 KOMMENTARER | KOMMENTERA

311

På akutmottagningen vid Astrid Lindgrens barnsjukhus i Solna eftersträvas kontinuerlig utveckling av vården ur ett barnperspektiv [1]. En viktig del av detta är smärtlindringen i samband med procedurer. Under de senaste två åren har LAT-gel (lidokain-adrenalin-tetrakain), ett i Sverige nyligen introducerat ytanestetikum, använts i verksamheten.

LAT-gel har visats vara ett lika effektivt anestetikum som lidokaininfiltration vid suturering och rengöring av mindre sårskador [2, 3]. Biverkningarna är få, och dessutom har gelen flera fördelar jämfört med infiltrationsanestesi. Barnet slipper till exempel ett smärtsamt nålstick, som annars kan medföra så mycket oro att barnet därefter inte längre kan samverka [2].

Leicester Children's Emergency Department

Lignocaine, Adrenaline and Tetracaine (LAT) Gel use in ED

Product Information

Lignocaine 4%, Tetracaine 0.5%, Adrenaline 0.1%

Provided in SINGLE use 3ml bottles

Onset 20-30 minutes

Lasts 30-60 min

For topical use on **broken** skin

Uses

- LAT gel is an anaesthetic gel that is safe to apply directly onto and **into** wounds.
- It is suitable for children age over 1 year.
- It is used to provide anaesthesia to allow cleaning and suturing of wounds and abrasions in children and removes the need for injectable anaesthetics.
- Should be used for wounds of the scalp, forehead, chin, limbs or trunk.

Contraindications

- ANY previous reaction to local/ general anaesthetic or known cholinesterase deficiency
- Wound on or near mucus membrane including eye, nose or mouth.
- Wound > 5cm in length
- Concern about tissue viability i.e. crush or flap wounds
- Wounds over 8 hours old
- Obvious injury to associated structures i.e. bone, tendon, blood vessels, joint or nerve
- Wounds to the ear, nose, genitalia or digits should be discussed with a SENIOR Dr (ST4 and above) BEFORE using LAT gel.

This is due to concerns about perfusion and also due to evidence showing LESS EFFECT on extremity wounds.

Please see over for treatment pathway

Use of Topical Wound Anaesthetic- LAT gel in the PED. Rowlands. Feb 2014

Journal of Pain Research

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ORIGINAL RESEARCH

Sufentanil Sublingual Tablet System (SSTS) for the management of postoperative pain after major abdominal and gynecological surgery within an ERAS protocol: an observational study

This article was published in the following Dove Press journal:
Journal of Pain Research

Stefano Turi
Francesco Deni
Gaetano Lombardi
Marilena Marmiere
Francesco Giuseppe Nisi
Luigi Beretta

Dipartimento di Anestesia e Rianimazione, Ospedale San Raffaele, Milano, Italy

Background: The Sufentanil Sublingual Tablet System (SSTS) is a new, pre-programmed, noninvasive, handheld system for patient-controlled analgesia (PCA) which may allow a faster postoperative recovery compared with standard PCA. The efficacy of SSTS in controlling pain after open abdominal surgery has already been documented. However, to our knowledge SSTS has never been investigated in patients undergoing major surgery within an Enhanced Recovery After Surgery (ERAS) protocol.

Methods: This observational, retrospective analysis included consecutive patients undergoing elective major abdominal and gynecological surgery. All patients received the SSTS device once they were fully awake and had a good control of pain at the end of the surgery. We analyzed changes in pain intensity according to the numerical rating scale (NRS) throughout the treatment as well as its duration, the number of administrations, and possible related adverse events. Patients were also interviewed to assess their quality of sleep and overall satisfaction with the SSTS device.

Results: The study included 308 patients. Compared to the first SSTS administration, pain intensity decreased from a median NRS of 6 to 0 at day 3, for an overall reduction of 79%. Results were already statistically significant at postoperative day 1 ($p<0.01$). Adverse reactions were observed in 62 patients, with nausea being the most frequent (12%), and in 93% of patients SSTS was discontinued because it was considered no longer necessary. Patient satisfaction was high, with 89% of them judging the device as "easy" or "very easy" to use.

Conclusions: Although the retrospective and observational nature of the study as well as the absence of a comparative group limits the strength of evidence, our results consider SSTS an effective and safe tool for the management of postoperative pain after major abdominal and gynecological surgery within an ERAS protocol.

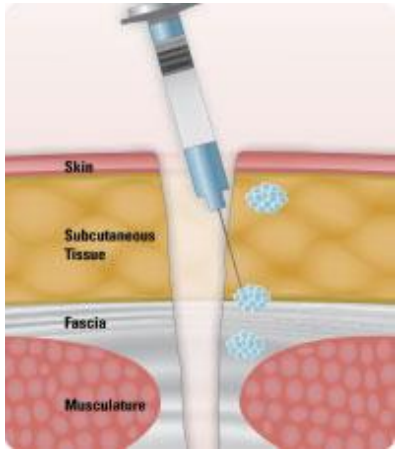
Keywords: SSTS, ERAS, analgesia, postoperative, PCA

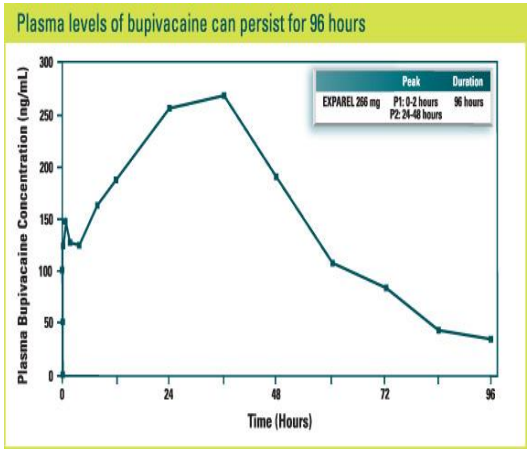
Sufentanil sublingual tablett 15 ug

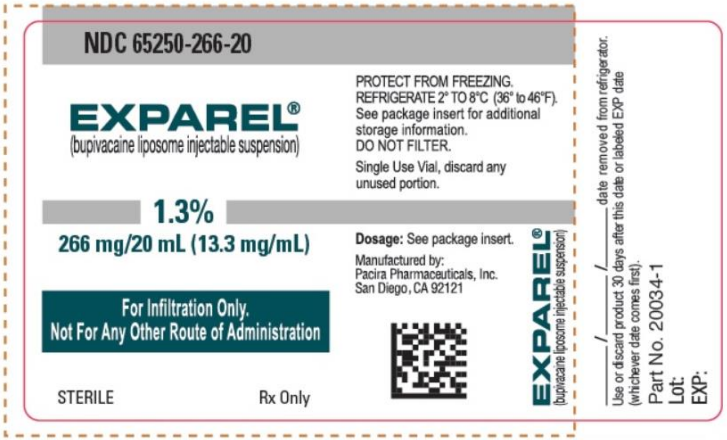
- 500 -1000 ggr mer potent än Morfin
- 78 % Biotillgänglighet via Buccal administrering
- T ½ 2,2 timmar

Cannabis inhalator säljs fritt i Kanada fr.o.m. oktober 2018

IASP 2018







Liposomalt Bupivacaine

https://www.youtube.com/watch?v=YdACjip9Ves

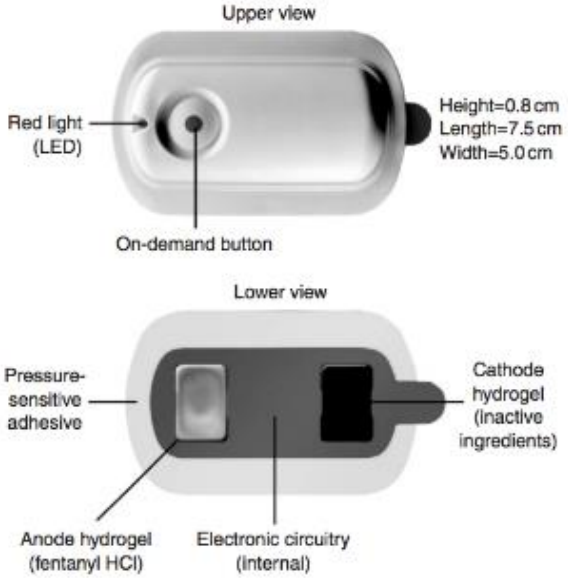
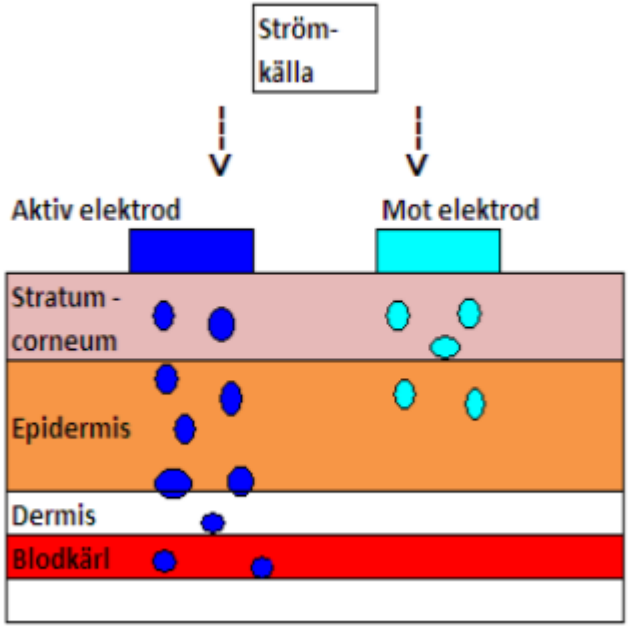


Fig 2 The fentanyl HCl iontophoretic transdermal system (fentanyl ITS). LED, light-emitting diode. *Source*: Provided by Janssen Pharmaceutica NV, Beerse, Belgium.



Fentanyl PCA plåster
- Jontofores

Fentanyl transpulmonärt

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> Uniquely permits patient self-titration of opioids:

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- Soft mist inhalation with an approved nebulizer
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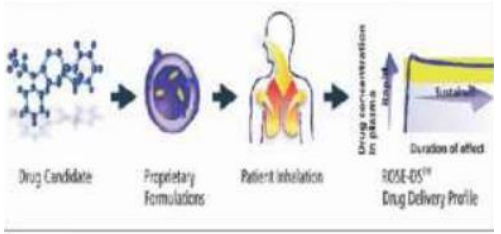
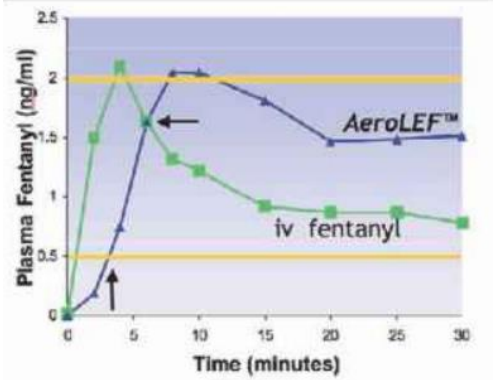
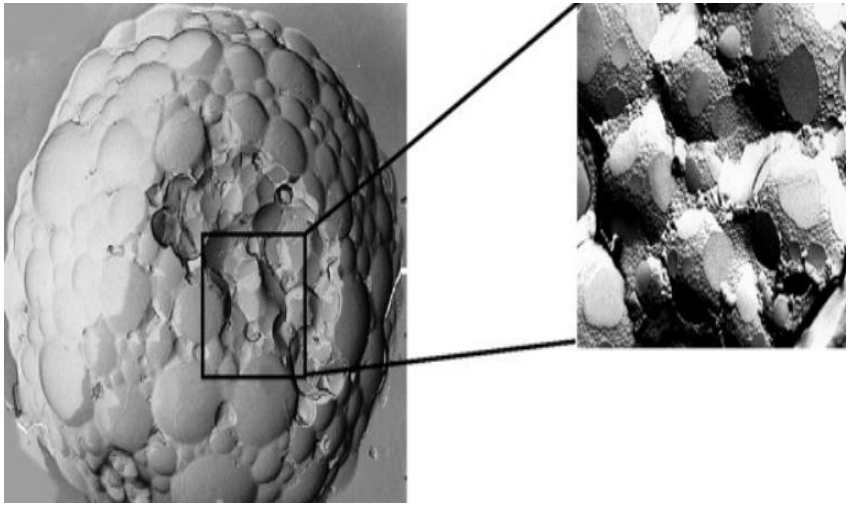
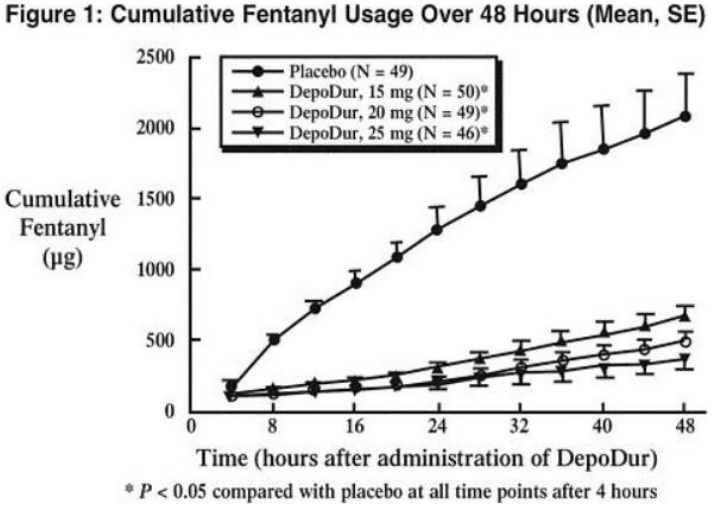


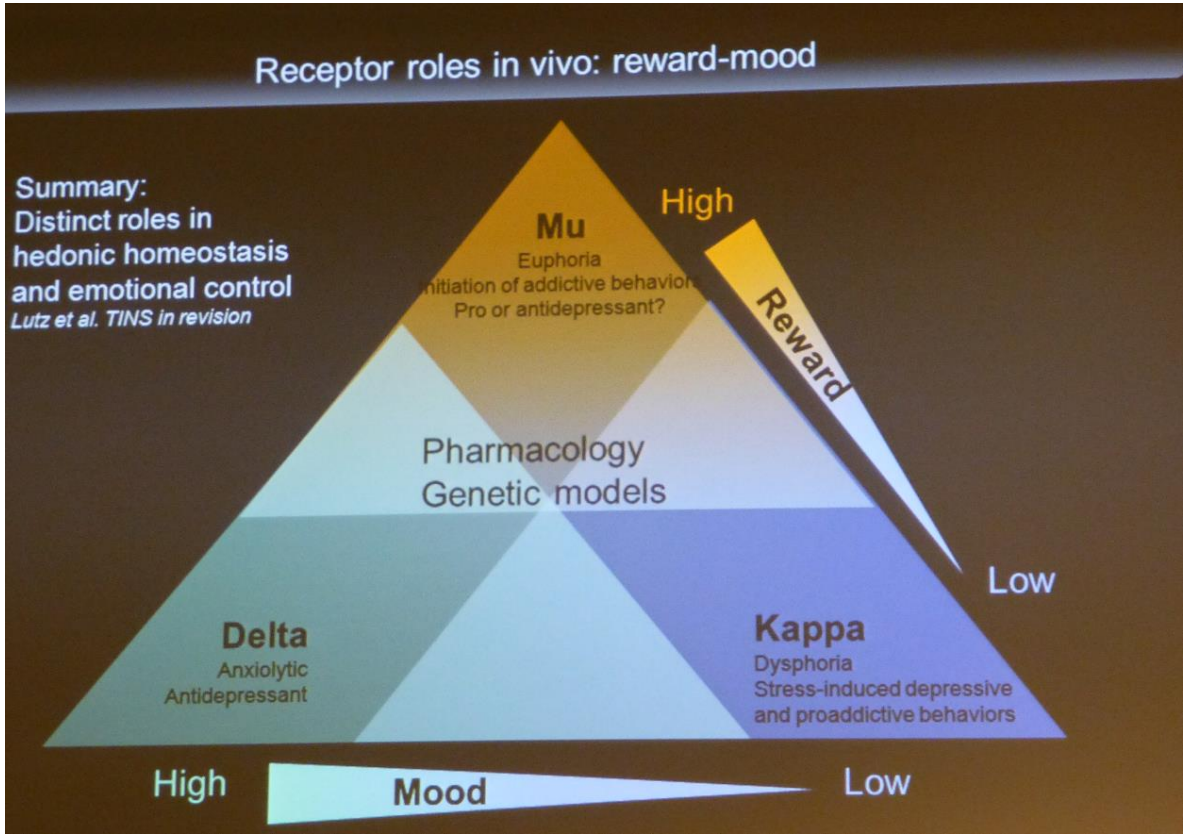






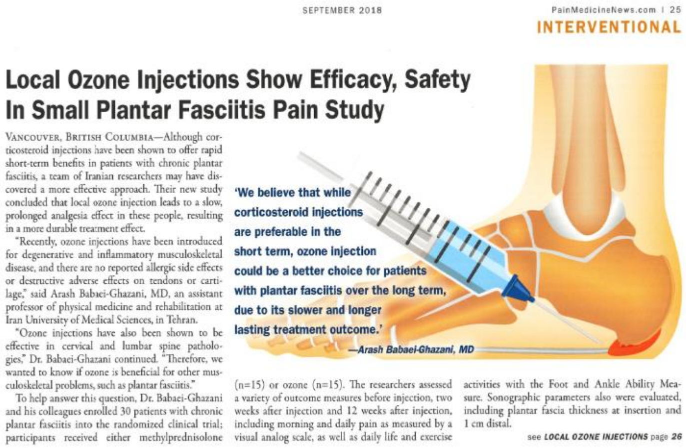
Depodur: Extended Release Epidural Morphine

Skräddarsy opioider?



IASP 2016

Ozon injektion



SEPTEMBER 2018

PainMedicineNews.com | 25

INTERVENTIONAL

Local Ozone Injections Show Efficacy, Safety In Small Plantar Fasciitis Pain Study

VANCOUVER, BRITISH COLUMBIA—Although corticosteroid injections have been shown to offer rapid short-term benefits in patients with chronic plantar fasciitis, a team of Iranian researchers may have discovered a more effective approach. Their new study concluded that local ozone injection leads to a slow, prolonged analgesia effect in these people, resulting in a more durable treatment effect.

"Recently, ozone injections have been introduced for degenerative and inflammatory musculoskeletal disease, and there are no reported allergic side effects or destructive adverse effects on tendons or cartilage," said Arash Babaei-Ghazani, MD, an assistant professor of physical medicine and rehabilitation at Iran University of Medical Sciences, in Tehran.

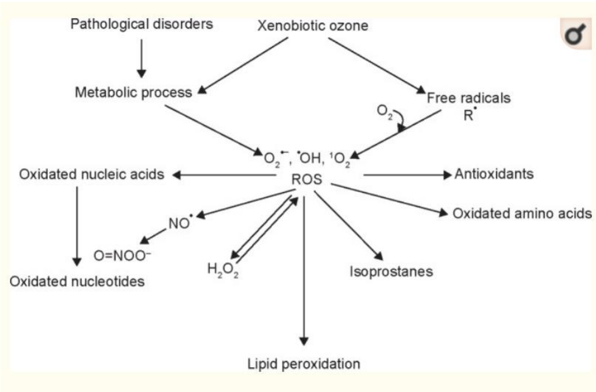
"Ozone injections have also been shown to be effective in cervical and lumbar spine pathologies," Dr. Babaei-Ghazani continued. "Therefore, we wanted to know if ozone is beneficial for other musculoskeletal problems, such as plantar fasciitis."

'We believe that while corticosteroid injections are preferable in the short term, ozone injection could be a better choice for patients with plantar fasciitis over the long term, due to its slower and longer lasting treatment outcome.'

—Arash Babaei-Ghazani, MD

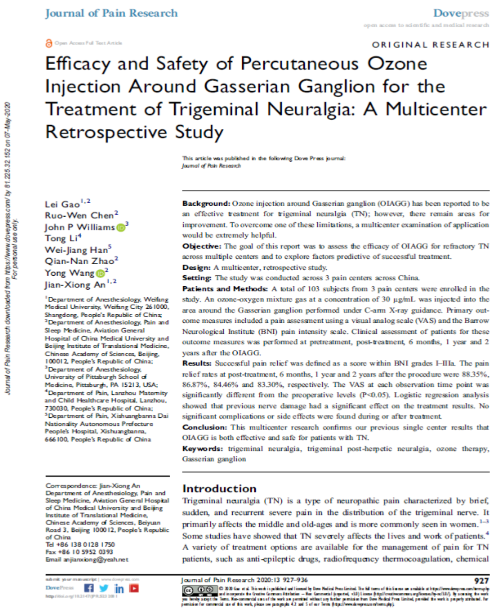
To help answer this question, Dr. Babaei-Ghazani and his colleagues enrolled 30 patients with chronic plantar fasciitis into the randomized clinical trial; participants received either methylprednisolone (n=15) or ozone (n=15). The researchers assessed a variety of outcome measures before injection, two weeks after injection and 12 weeks after injection, including morning and daily pain as measured by a visual analog scale, as well as daily life and exercise activities with the Foot and Ankle Ability Measure. Sonographic parameters also were evaluated, including plantar fascia thickness at insertion and 1 cm distal.

see LOCAL OZONE INJECTIONS page 26



IASP 2018

"inhibition of inflammation, correction of ischemia and venous stasis to finally inducing a reflex therapy effect by stimulating anti-nociceptor analgesic mechanisms"



Journal of Pain Research

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ORIGINAL RESEARCH

Efficacy and Safety of Percutaneous Ozone Injection Around Gasserian Ganglion for the Treatment of Trigeminal Neuralgia: A Multicenter Retrospective Study

This article was published in the following Dove Press journal:
Journal of Pain Research

Lei Gao[1,2]
Ruo-Wen Chen[2]
John P Williams[3]
Tong Li[4]
Wei-Jiang Han[5]
Qian-Nan Zhao[2]
Yong Wang[2]
Jian-Xiong An[1,2]

[1]Department of Anesthesiology, Weifang Medical University, Weifang City 261000, Shangdong, People's Republic of China; [2]Department of Anesthesiology, Pain and Sleep Medicine, Aviation General Hospital of China Medical University and Beijing Institute of Translational Medicine, Chinese Academy of Sciences, Beijing, 100012, People's Republic of China; [3]Department of Anesthesiology, University of Pittsburgh School of Medicine, Pittsburgh, PA 15213, USA; [4]Department of Pain, Lanzhou Maternity and Child Healthcare Hospital, Lanzhou, 730030, People's Republic of China; [5]Department of Pain, Xishuangbanna Dai Nationality Autonomous Prefecture People's Hospital, Xishuangbanna, 666100, People's Republic of China

Background: Ozone injection around Gasserian ganglion (OIAGG) has been reported to be an effective treatment for trigeminal neuralgia (TN); however, there remain areas for improvement. To overcome one of these limitations, a multicenter examination of application would be extremely helpful.
Objective: The goal of this report was to assess the efficacy of OIAGG for refractory TN across multiple centers and to explore factors predictive of successful treatment.
Design: A multicenter, retrospective study.
Setting: The study was conducted across 3 pain centers across China.
Patients and Methods: A total of 103 subjects from 3 pain centers were enrolled in the study. An ozone-oxygen mixture gas at a concentration of 30 µg/mL was injected into the area around the Gasserian ganglion performed under C-arm X-ray guidance. Primary outcome measures included a pain assessment using a visual analog scale (VAS) and the Barrow Neurological Institute (BNI) pain intensity scale. Clinical assessment of patients for these outcome measures was performed at pretreatment, post-treatment, 6 months, 1 year and 2 years after the OIAGG.
Results: Successful pain relief was defined as a score within BNI grades I–IIIa. The pain relief rates at post-treatment, 6 months, 1 year and 2 years after the procedure were 88.35%, 86.87%, 84.46% and 83.30%, respectively. The VAS at each observation time point was significantly different from the preoperative levels ($P<0.05$). Logistic regression analysis showed that previous nerve damage had a significant effect on the treatment results. No significant complications or side effects were found during or after treatment.
Conclusion: This multicenter research confirms our previous single center results that OIAGG is both effective and safe for patients with TN.
Keywords: trigeminal neuralgia, trigeminal post-herpetic neuralgia, ozone therapy, Gasserian ganglion

Correspondence: Jian-Xiong An
Department of Anesthesiology, Pain and Sleep Medicine, Aviation General Hospital of China Medical University and Beijing Institute of Translational Medicine, Chinese Academy of Sciences, Beiyuan Road 3, Beijing 100012, People's Republic of China
Tel +86 138 0128 1750
Fax +86 10 5952 0393
Email anjianxiong@yeah.net

Introduction

Trigeminal neuralgia (TN) is a type of neuropathic pain characterized by brief, sudden, and recurrent severe pain in the distribution of the trigeminal nerve. It primarily affects the middle and old-ages and is more commonly seen in women.[1–3] Some studies have showed that TN severely affects the lives and work of patients.[4] A variety of treatment options are available for the management of pain for TN patients, such as anti-epileptic drugs, radiofrequency thermocoagulation, chemical

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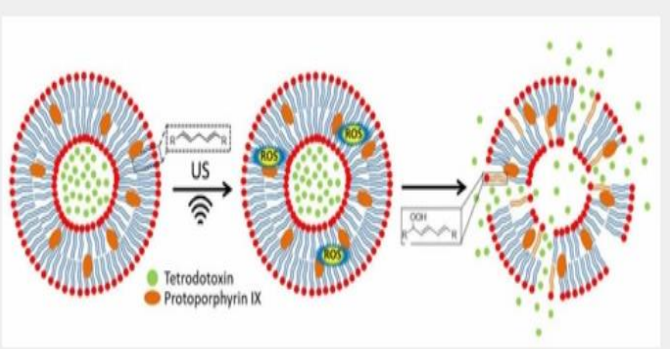
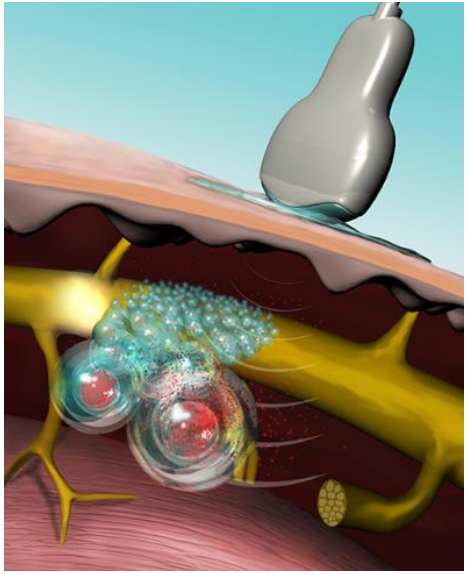
Journal of Pain Research 2020:13 927–936

927



Schematic of ultrasound-triggered liposomal drug release. Sonosensitizer protoporphyrin IX (PPIX) was encapsulated within liposomes composed of lipids sensitive to reactive oxygen species (ROS). Upon insonation, ROS generated by the sonosensitizers would react with the lipid bilayer and induce drug release. From Rwei et al., reprinted by permission from Macmillan Publishers Ltd.



Ultrasound triggered liposomal drug release

Ultrasound-triggered local anaesthesia
Rwei AY, Paris JL, Wang B, Wang W, Axon CD, Vallet-Regí M, Langer R, Kohane DS
Nat Biomed Eng. 2017 Aug 9; 1:644-53.

Harvard Medical School, US, used liposomes to encapsulate the local anesthetic tetrodotoxin (TTX) along with protoporphyrin IX (PPIX); the latter is a "sonosensitizer" that makes the liposome sensitive to effects of sound.

"Previously, we have developed liposomal formulations that contain saxitoxin [a sodium channel blocker] and dexamethasone, which will last up to a week after injection.

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Treatment of Pain Gets the Green Light

A study by UA researchers revealed that rats with neuropathic pain that were bathed in green LED showed more tolerance for thermal and tactile stimulus. A clinical trial involving people suffering from fibromyalgia is underway.

By Robin Tricoles, University Communications

March 1, 2017

Share Tweet Share Email Print

Rats were exposed to room light and fitted with contact lenses, one shown here, that allowed the green spectrum wavelength to pass through the lenses.

(Photo: Bob Demers/UANews)

It wasn't the first time that Dr. **Mohab Ibrahim**'s brother, Wael, had called complaining of a headache. Ibrahim suggested that he take some ibuprofen.

Wael declined his brother's advice. "No, I'm going to go and sit among the trees, and that will make me feel better," he said.

"It didn't occur to me until recently that Wael's headaches were getting better when he just sat among the trees," says **Ibrahim**, an assistant professor of **anesthesiology** and **pharmacology** and director of the **Comprehensive Pain Management Clinic at Banner – University**

Lindrar grönt ljus smärta?

Preop Ninja smärttest preoperativt?

IASP 2018

Akut smärtlindring gasinhalator
Methoxyflurane

SFAI mötet 2018

Organisationsförändring

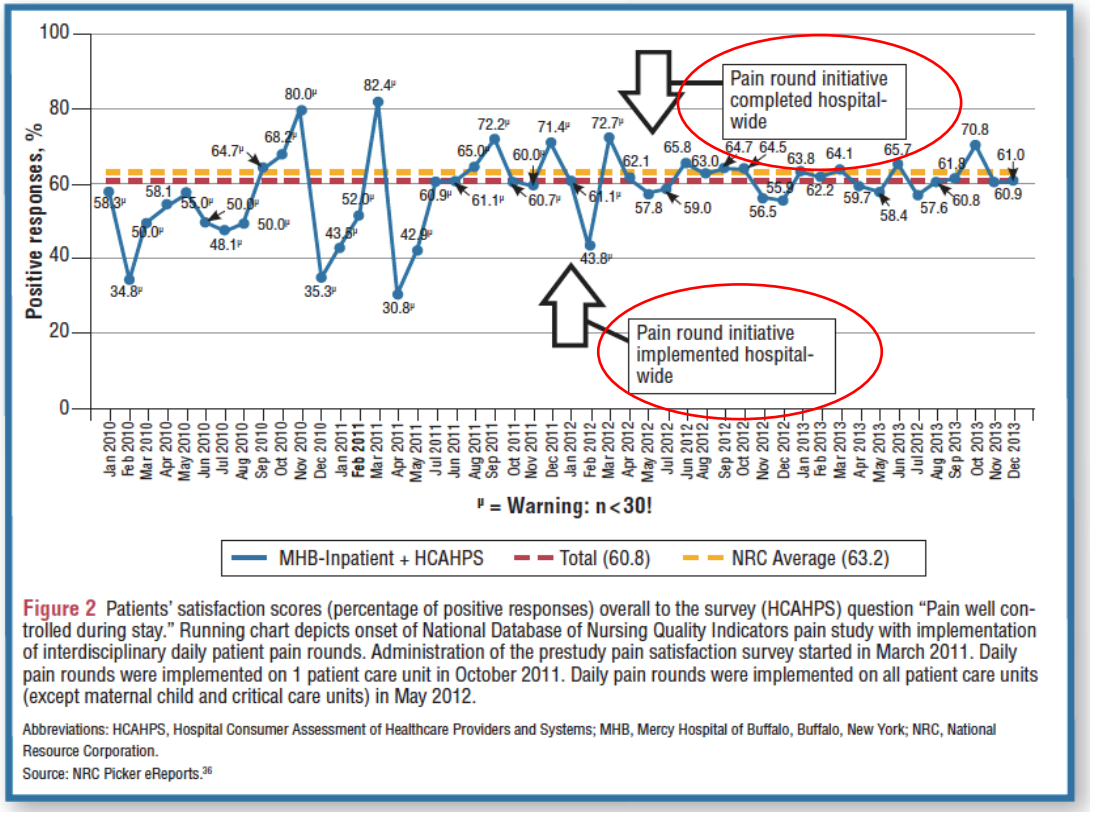


Figure 2 Patients' satisfaction scores (percentage of positive responses) overall to the survey (HCAHPS) question "Pain well controlled during stay." Running chart depicts onset of National Database of Nursing Quality Indicators pain study with implementation of interdisciplinary daily patient pain rounds. Administration of the prestudy pain satisfaction survey started in March 2011. Daily pain rounds were implemented on 1 patient care unit in October 2011. Daily pain rounds were implemented on all patient care units (except maternal child and critical care units) in May 2012.

Abbreviations: HCAHPS, Hospital Consumer Assessment of Healthcare Providers and Systems; MHB, Mercy Hospital of Buffalo, Buffalo, New York; NRC, National Resource Corporation.

Source: NRC Picker eReports.[36]

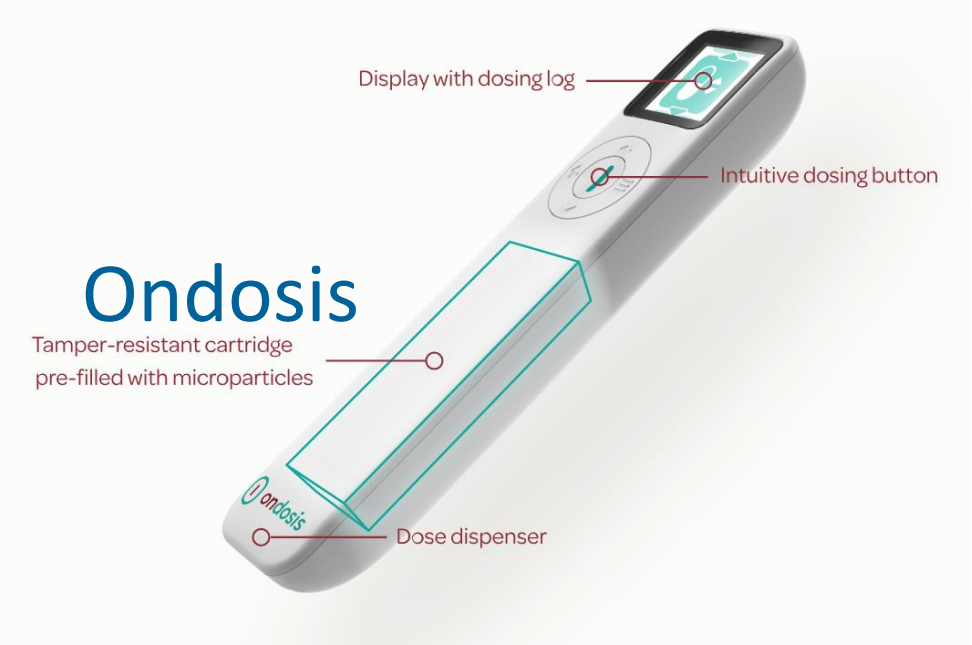
<u>Vad gjorde man:</u>

Införde interdisciplinär regelbunden smärtrond på avdelningen

Effective Pain Management and Improvements in Patients' Outcomes and Satisfaction

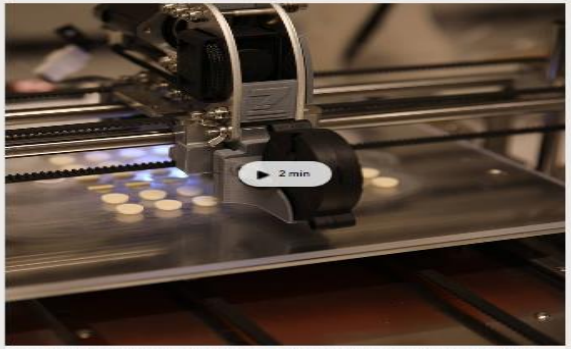
Diane Glowacki, RN, MSN, CNS, CNRN-CMC

CriticalCareNurse Vol 35, No. 3, JUNE 2015 33



svt NYHETER Nyheter Lokalt Sport SVT Play Barn

UPPSALA



Snart kan du skriva ut 3D-medicin hemma. Här Christel Bergström, docent i galenisk farmaci vid Uppsala universitet. Foto: SVT / Adam Sjöberg

Snart kan du skriva ut 3D-medicin hemma

Publicerad 15 augusti 2019

Vid Biomedicinskt centrum i Uppsala har forskare utvecklat en 3D-skrivare som kan tillverka läkemedel. Den nya tekniken gör det möjligt att individanpassa storlek, dos och smak på tabletterna.

Tänk dig att i framtiden kunna skriva ut din egen medicin hemma. Det är något som en forskargrupp vid Biomedicinskt centrum i Uppsala försöker lösa med hjälp av en 3D-skrivare. Allt sker i ett samarbete mellan Akademiska sjukhuset och Uppsala universitet.

I just det här projektet ligger fokus på att kunna tillverka medicin till svårt sjuka barn.

Individanpassad dosering

Idag framställs majoriteten av all medicin utifrån en större målgrupp med en doseringstorlek som oftast passar en vuxen person, något som kan orsaka problem när man ska ge yngre barn medicin.

– Att dosanpassa en medicin är intressant ur ett barns perspektiv då barn behöver läkemedel i lägre dos än vuxna, säger Christel Bergström, docent i galenisk farmaci, vid Institutionen för farmaci vid Uppsala universitet.

3D-skrivaren ska förenkla och säkerhetsställa att en person får rätt dos av en specifik medicin utan att först behöva dela eller krossa den.

– Med hjälp av 3D-skrivaren kan man istället skriva ut tabletter som har exakt den dos som barnet behöver oavsett ålder.

Ska kunna skriva ut medicin hemma

Förhoppningarna med projektet, vilket också är en av utmaningarna, är att i framtiden kunna låta sjukhus, apotek och privatpersoner ha tillgång till en egen 3D-skrivare.

– Det finns alltid en teknologisk överföringsproblematik i detta, något som vi arbetar mycket med: hur gör vi det säkert när vi lanserar skrivaren till kliniker? Men hur ser vi också till att det är säkert när vi flyttar hem skrivaren till vårdnadshavarna till de sjuka barnen?

SENASTE Kostnaderna för corona drar iväg

KONTAKT SKRIV PRENUMERERA ANNONSERA LT ARRANGER

NYA RÖN

Billigare behandling av artros med digital app

Läkartidningen 200814

Leif Dahlberg, senior professor i ortopedi, institutionen för kliniska vetenskaper Lund

Björn Ekman, docent i hälsoekonomi, institutionen för kliniska vetenskaper Malmö; båda Lunds universitet

Egenreferat. Närmare 25 procent av Sveriges vuxna befolkning uppskattas lida av artros, något som innebär ett stort lidande för den drabbade och en stor börda för samhället. En ny studie [1] från Lunds universitet finner att ett digitalt behandlingsprogram för patienter med artros kan erbjuda ett kostnadseffektivt alternativ till den traditionella vården.

Studien jämför vilka resurser som behövs för att leverera två alternativa behandlingsprogram för patienter med artros. Den första modellen är BOA (Bättre omhändertagande av patienter med artros), den traditionella artrosskolan. Den jämförs med ett digitalt program där artrospatienter behandlas via en applikation. Båda modellerna erbjuder evidensbaserad grundbehandling av artros enligt Socialstyrelsens riktlinjer, med fokus på information, träning och viktkontroll.

Utifrån tillgängliga data och information om behandlingsalternativen tar analysen ett samhällsekonomiskt perspektiv och skattar resursåtgången både för sjukvårdssystemet och för patienterna. Faktorer vanligt förekommande i kostnadsanalyser har undersökts, till exempel antal besök, administration och transporter. Att behandla en typisk patient inom det digitala programmet kostar 2 776 kronor. Som jämförelse är kostnaden för en BOA-patient nästan fyra gånger högre, 10 611 kronor. De största skillnaderna handlar om kostnader för resor och tid för patienten. BOA-programmet har också högre administrativa kostnader (förberedelser och uppföljningar). Den digitala vårdmodellen innebär att patienten tränar vid fler tillfällen, men att varje tillfälle genomförs under kortare tid.

Det är särskilt viktigt att sätta kostnaden i relation till behandlingens effekt. En tidigare studie [2] visar att patienter i det digitala programmet i genomsnitt rapporterade en smärtminskning från 5,4 till 3,5 på en 10-gradig skala efter sex veckor. Det innebär en minskning på 35 procent. Patienter som behandlades i BOA-programmet reducerade i genomsnitt sin smärta från 48 till 37 under en lika lång period – en reduktion på 23 procent. Tillsammans ger dessa resultat stöd för att det digitala programmet kan utgöra ett kostnadseffektivt alternativ.

Beroende på i vilken utsträckning det digitala alternativet ersätter det traditionella kan betydande resurser sparas inom svensk artrosvård. Om till exempel hälften av alla patienter som fullföljde det traditionella artrosprogrammet 2018 i stället hade behandlats digitalt visar studien att cirka 87 miljoner kronor hade sparats.

o Jäv: Digital grundbehandling av artros drivs av företaget Joint Academy. Studien är beställd av Leif Dahlberg, senior professor i ortopedi vid Lunds universitet och grundare samt medicinsk chef på Joint Academy. Joint Academy har tillhandahållit delar av data och informationen i analysen, men har inte på något sätt haft inflytande på designen, implementeringen eller tolkningen av studiens resultat.

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0 KOMMENTARER | KOMMENTERA

Digital Appar:

- Även framtid för postop vård?

- Håller på att utvecklas på Sahlgrenska och även på andra verksamheter

LT 14 maj 2018

NYHETER

Sahlgrenska ser patienten med nya – smarta – glasögon

Patientdata mitt framför ögonen, trots att man står med händerna fulla i ett annat rum. Det är tanken med de smarta glasögon som nu testas på Sahlgrenska universitetssjukhuset.

Jesper Cederberg

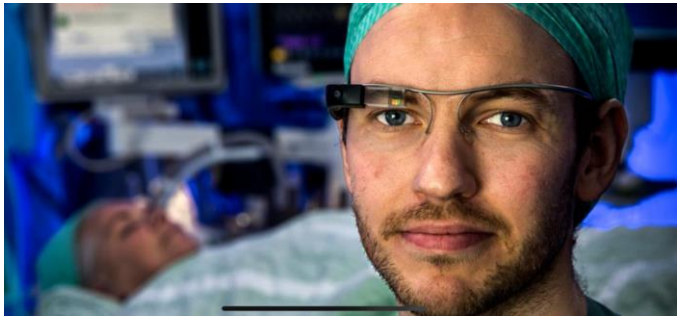
Martin Hubrich (till vänster), anestesiläkare, och Per Enlöf, anestesisjuksköterska, förevisar de smarta glasögon som testas i ett projekt vid Sahlgrenska universitetssjukhuset. Foto: Per Enlöf

Vitalparametrarna projiceras på ett prisma framför det ena ögat. Det gör att läkare och sjuksköterskor kan arbeta med annat och samtidigt få larm och information direkt i synfältet, även om de befinner sig långt från vanliga, fasta skärmar. Användaren kan styra funktionerna med både röst och touchfunktion.

– Som senior läkare hjälper jag ofta flera juniora kollegor. Och genom det här kan jag få larm och indikationer på problem från flera salar. Det här är ett nytt sätt på vilket jag kan hålla mig uppdaterad om vad som händer. Det är i alla fall vår förhoppning, säger anestesiläkare Martin Hubrich.

Nu förbereds tester i patientnära miljö inom anestesikliniken på Operation 5 vid Sahlgrenska universitetssjukhuset. Efter ett par, tre månader återkopplar personalen till utvecklarna, och sedan drar en ny testfas igång i höst. Användningen av glasögonen utvärderas också i ett forskningsprojekt med Göteborgs universitet och Blekinge tekniska högskola.

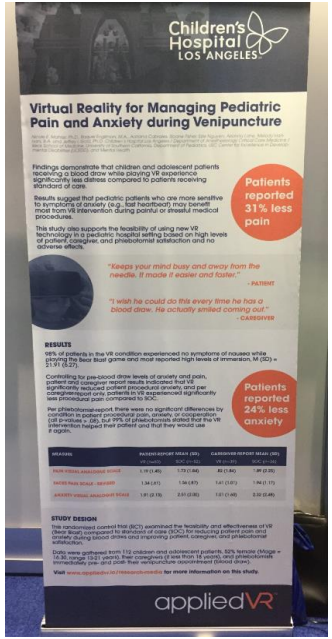
Ansvarig för testverksamheten på Sahlgrenska är anestesisjuksköterska

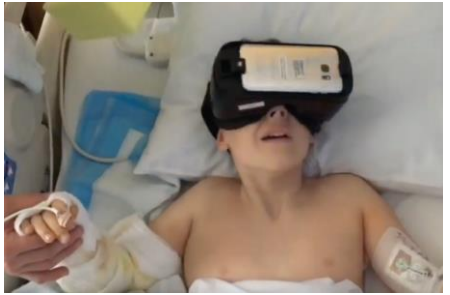


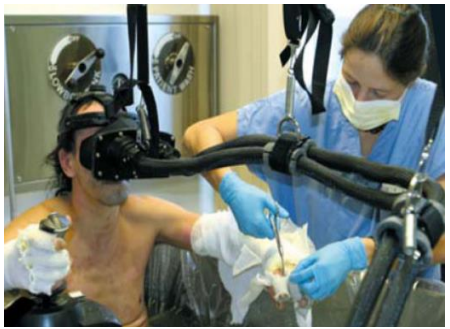
Doktorand projekt Sahlgrenska

Olika AR glasögon

Virtual Reality = VR



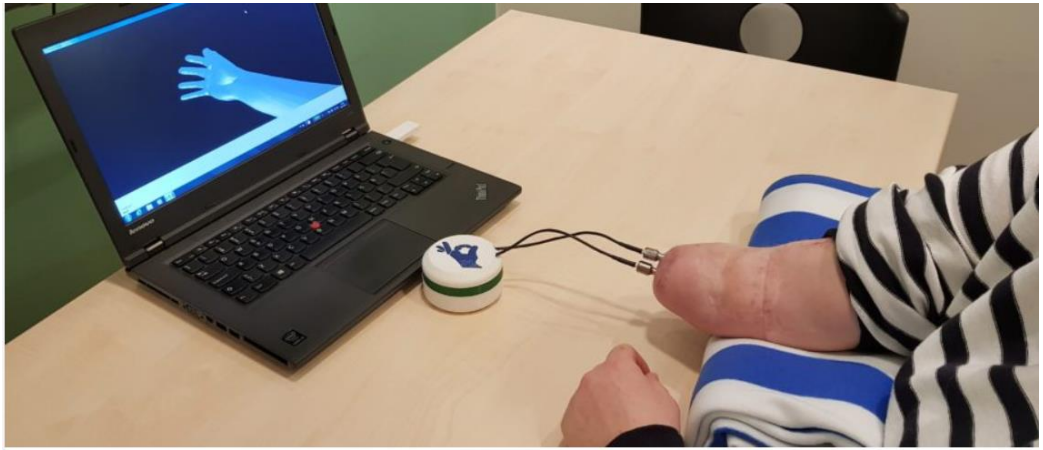




https://www.youtube.com/watch?v=jNIqyyypojg

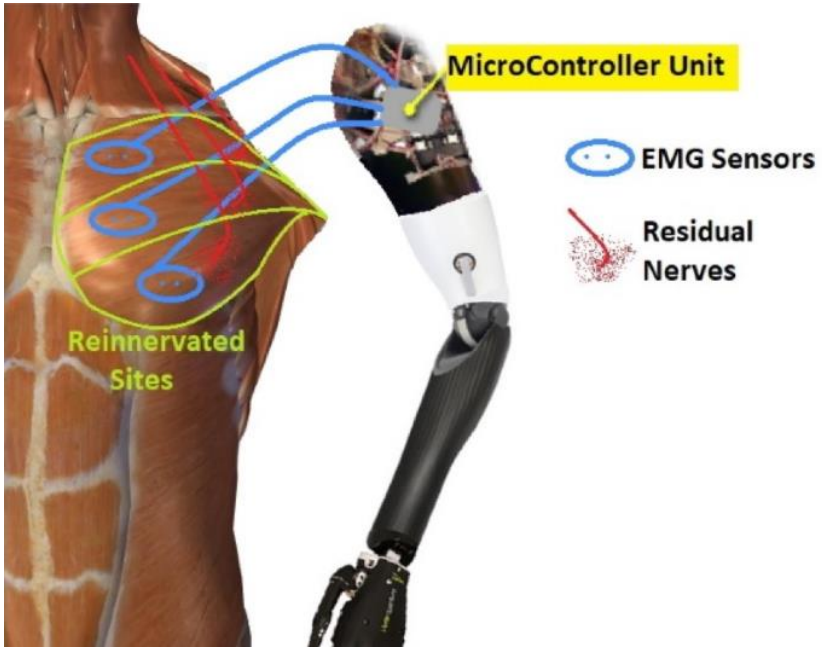
IASP 2018

Targeted Muscle Reinnervation= TMR



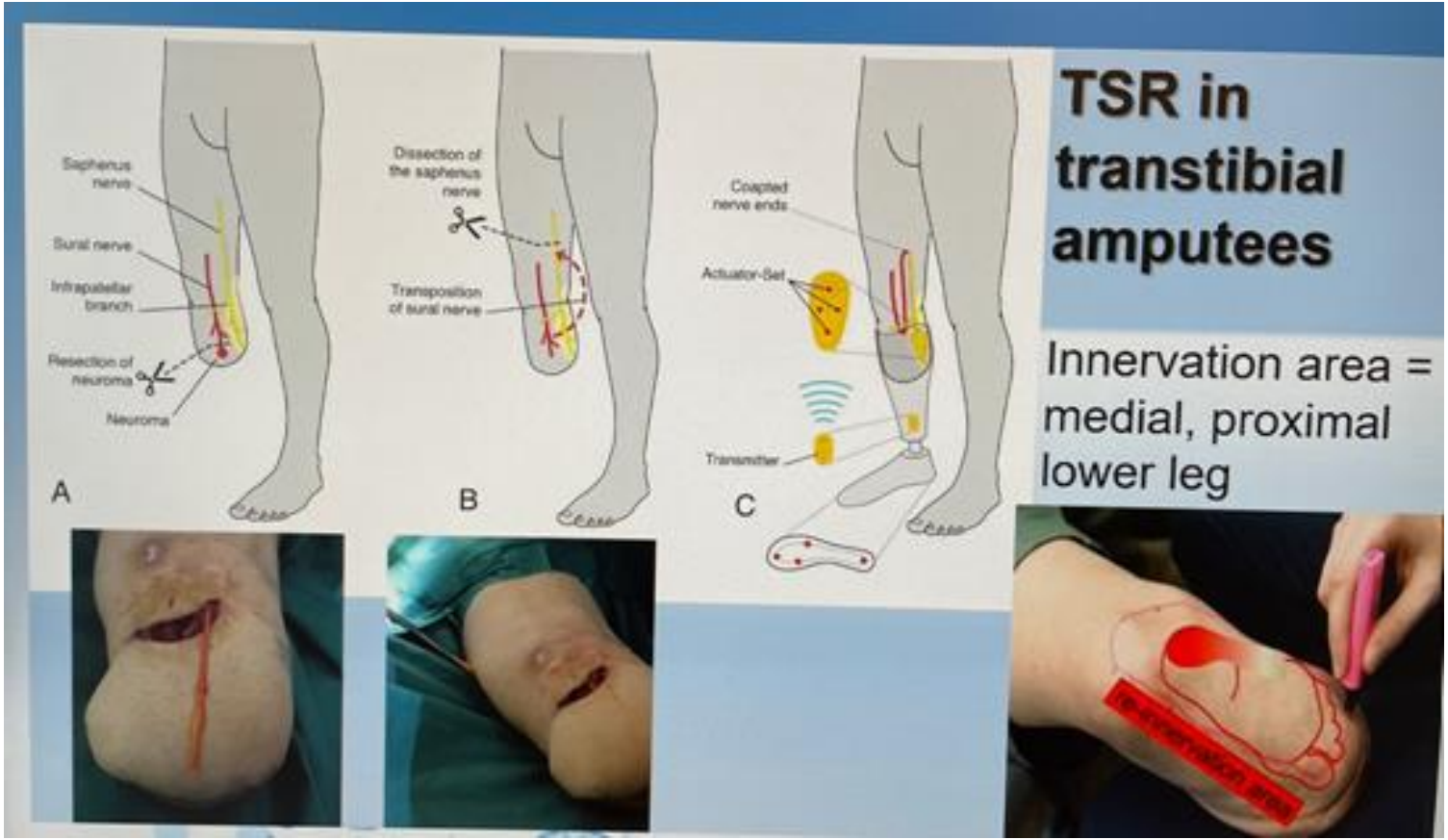
Första fingerfärdiga och kännande handprotesen implanterad

5 FEBRUARI, 2019 — KOMMENTERA



- https://www.youtube.com/watch?v=FUOqbSnc0Gk

Targeted Sensory Reinervation = TSR



AUGMENTED REALITY - FÖRSTÄRKT VERKLIGHET

Web-kameran skapar en virtuell arm som patienten ser på skärmen och rör via sina stumpmuskler

Preliminära data:
- Minskad ihållande smärta ca 50 %
- Smärtintensiteten minskade 50%
- Sömnstörning av smärta minskade 60 %
- Smärta vid ADL minskade >40%
- Läkemedelsintag minskade ca 80 %
- Effekterna kvarstod vid 6 mån

CENTER FOR BIONICS & PAIN RESEARCH

CHALMERS UNIVERSITY OF TECHNOLOGY

REGION VÄSTRA GÖTALAND SAHLGRENSKA UNIVERSITY HOSPITAL

UNIVERSITY OF GOTHENBURG

Review | Open Access | Published: 03 July 2018

The rising tide of opioid use and abuse: the role of the anesthesiologist

Elena J. Koepke, Erin L. Manning, Timothy E. Miller, Arun Ganesh, David G. A. Williams & Michael W. Manning

Perioperative Medicine **7**, Article number: 16 (2018) | Cite this article

16k Accesses | **54** Citations | **15** Altmetric | Metrics

Abstract

Opioid use has risen dramatically in the past three decades. In the USA, opioid overdose has become a leading cause of unintentional death, surpassing motor vehicle accidents. A patient's first exposure to opioids may be during the perioperative period, a time where anesthesiologists have a significant role in pain management. Almost all patients in the USA receive opioids during a surgical encounter. Opioids have many undesirable side effects, including potential for misuse, or opioid use disorder. Anesthesiologists and surgeons employ several methods to decrease unnecessary opioid use, opioid-related adverse events, and side effects in the perioperative period. Multimodal analgesia, enhanced recovery pathways, and regional anesthesia are key tools as we work towards optimal opioid stewardship and the ideal of effective analgesia without undesirable sequelae.

Dags att vända på pyramiden?

Nytt sätt att se på behandlingstrappan postop?

Fig. 2

New paradigm in analgesia management. The old way of management of pain has relied on opioids as the foundation of pain control, with non-opioid adjuncts added if necessary due to patient condition. In the new way, management of pain begins with non-opioid-based techniques that are evidence based and demonstrated to decrease opioid use

Hur vad det med nyheter tycker ni?

VÄSTRA GÖTALANDSREGIONEN
SAHLGRENSKA UNIVERSITETSSJUKHUSET


Tack
Sahlgrenska tidigt 1900 tal