Refractory cancer pain







Main regional center for pain relief & supportive/palliative care

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Making Cancer History®

Adjunct Professor, Palliative-supportive care MD Anderson, University of Texas, Houston



Stearns LM, Abd-Elsayed A, Perruchoud C, et al. Intrathecal drug delivery systems for cancer pain: an analysis of prospective, multicenter product surveillance registry. *Anesth Analg.* 2020;130:289–297.

Devices or Care for Cancer Pain Management?

To the Editor

for minimizing this risk.

The analysis of a prospective, multicenter product surveillance registry of intrathecal drug delivery systems (IDDSs)¹ raises concerns about the underlying assumptions of need and the interpretation of data. The fact that cancer pain remains undertreated due to lack of adherence to guidelines does not imply such guidelines do not work; rather it is necessary to spread the knowledge regarding the use of opioids. The 3-step approach, improved by optimal use of opioids and tailored treatment, resolves most cancer pain issues, even in difficult cases. Thus, the bad examples should be not used to promote something other. The increased scrutiny of long-term systemic opioids used triggered by the opioid epidemic in the United States does not support the use of implantable techniques. Appropriate use by skilled professionals is a warranty

Is the statistically significant reduction in pain intensity from 6.6 to 5.5 clinically relevant? To most clinicians and patients, this would be considered a failure corresponding to evitable and prolonged suffering. The minimal clinically important difference should be of at least 2 points or <33%.² Regarding data on quality of life on 41 available patients in a population with a median survival of 3 months, an incalculable number of reasons, other than pain, profoundly influence the quality of life.

In very conservative settings, as deduced by the low opioid dose escalation after 1 month of treatment (mean dose of 32 mg of oral morphine equivalents), pain intensity decreased from 6.1 to 2.6.³ The outcome obtained with such low level intensity of care raises the question of why or when an IDDS would be considered in a treatment plan.

Finally, what is intractable pain? Is it just a state of pain intensity, regardless the level of analgesic treatment, or after "optimization" of opioid therapy according to the "best" palliative care (pain does not live alone!)? I published a case of a patient treated with an intrathecal pump unsuccessfully that was resolved with simple therapeutic measures ... by telephone.⁴

Sebastiano Mercadante, MD

Main Regional Center for Pain Relief and Palliative/Supportive Care La Maddalena Cancer Center Palermo, Italy terapiadeldolore@lamaddalenanet.it; 03sebelle@gmail.com Duarte R, Copley S, Nevitt S, Maden M, Al-Ali AM, Dupoiron D, Eldabe S. Effectiveness and safety of intrathecal drug delivery systems for the management of cancer pain: a systematic review and metaanalysis. Neuromodulation. 2022;S1094– 7159(22): 00563–73.

Our findings suggest that IDDS is effective in reducing pain intensity for patients with cancer pain when compared with pretreatment.



REVIEW

Refractory Cancer Pain and Intrathecal Therapy: Critical Review of a Systematic Review

Sebastiano Mercadante 💿

21 studies selected. Analysis of these studies showed evident **lack** of proper assessment because of optimistic interpretation regarding the outcomes, poor consideration of complications, and inclusion of patients with short survival. Indication of intrathecal therapy as a condition in which a patient has failed to respond to multiple therapies provided by a pain or palliative care physician or at sufficient doses for adequate durations, as suggested by the same research group, has been disregarded.

This can **discourage to use intrathecal therapy in patients who are really unresponsive to multiple opioid strategies** subtrahend a potent means to be used in a very selected population.





A&A Open mind article

Sebastiano Mercadante, Palermo, Italy Ariana Nelson, Irvine CA, USA Complementary role for palliative care in intractable cancer pain







RCT of an implantable drug delivery system compared with comprehensive medical management. Smith et al, J Clin Oncol 2002

>202 pts with uncontrolled pain by opioid doses >200 mg/day or presenting toxicity

CMM v CMM plus IDDS

- RESULTS
- •Less pain
- Less toxicity
- •Lower systemic opioid doses
- •Longer survival
- •QoL

Thus.....

There is strong evidence that patients receiving 200 mg/day of oral morphine are candidates for an implantable pump for delivering IT morphine



Concerns



Implantable pumps in cancer pain Concerns...

- No previous optimization therapy
- Intractable pain???
- The use of implantable pumps also depends on the amount of volume to administer (maximum 60 mls).
- Refilling
- Problems in changing the doses
- It is unlikely to be used in pts requiring adjuvant drugs to opioids, such as local anesthetics (2.5-5 mls/day, equivalent to 12.5-25 mg of bupivacaine 0.50%)

Long-term effects of IDDS... (6 mos follow-up)Smith et al, Ann Oncol 2005

Costs: 22718 \$ (CMM) 52745 \$ (IDDS)

Pts randomized to IDDS but never receiving it because their pain and toxicity were controlled,

had survival equal to those who received IDDS.....

Can a phone call be more effective than an intrathecal implanted pump?

Sebastiano Mercadante & Patrizia Giardina

Supportive Care in Cancer

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Support Care Cancer (2013) 21:1213-1215 DOI 10.1007/s00520-012-1665-7





- 40 yrs, lung cancer, bone metastases
- Admitted to hospice after being managed in an acute hospital with a pain clinic (national hub....)

Previous treatment:

Oxycodone/naloxone 20/10 mg \rightarrow inefficacy

Phone call from Hospice in Messina to the Unit in Palermo:

Bla bla, bla...

Dont' care of the pump and restart with IV morphine titration, and call again in 15 minutes

Effective dose 10 mg !!!

OK, start an IV infusion of 60 mg/day of IV Morphine and the same dose 10 mg for BTP. Call again tomorrow morning

The day after

- Prof? Hi, how is going there? Perfectly, just two calls for BTP. The patient
 - is really happy.
- That's good. Give oral morphine 60 mg three times a day and 30 mg as needed.
- I look forward to have news in the next days

Three days after

Ohhh, anything is under control and the patient is ready to go home. No BTP episodes anymore, what about?

Hi Patricia, let's discharge home. Good job. I'm creditor for a dinner...

____Età _____ Nato il Cognome e Nome___ Tel. Via Residente a Anamnesi - Esame obiettivo Port 14.6.2011 cotetey undtwice INAVAN - port (porteles 4000) poupe allee 22 5800 , upon continuo former Zicoliotiol - Ropi Vacaice Prilou T dr welle not our unfice Alio Sitico, uppero enals V7/09/200 d'instes boy de one à primere aturité 4961 Diagnosi KPN + PATHUODIONFO TI 4 livere VINONELENMA edi poudurale polay Towers de POMPA 12 6 Hudpor 1 thinkine fl. openio = A pursure S.C. - 4-5 file PALEXIA ISO My X2 Terapia MEGACEL60 ×1 BECIACONITATE 25 ×1 TRATISTEC 52 Optil's from -r EFFENTONA 600 Mar 16 DEPALLES 1 el motiono 71/28. Ind From por 1 la me Comunicazioni particolari: Da conservare per le visite successive Per il Dott. Lo Specialista TLM mod 46/03

67 yrs, Ka colon Surgery - pelvic RT

No disease, motor deficit from RT, on wheel chair Three years of suffering...

- Maximum opioid dose TD fentanyl 100µg/h
- Myoclonus, hiccup
- Addicted: OTFC 400 mcg (> 10 pieces a day), with a pain control for 1 h).

and.....





IT pump

Spinal cord stimulation

Treatment

Switch-off SCS Defilling IT pump Rapid titration IV fentanyl 0.6 mg IV infusion fentanyl 3 mg/24 hrs

Disappearance of myclonus & hyccup Happy with pain control Transdermal fentanyl 150 µg/h Sublingual fentanyl 600 µg as needed

Discharge

- Pain optimally controlled
- On Methadone 18 mg x 3
- Long survivor
- After 7 yrs....
- pain controlled with multiple switching in time

Intrathecal Treatment in Cancer Patients Unresponsive to Multiple Trials of Systemic Opioids

Sebastiano Mercadante, MD,*† Giuseppe Intravaia, RN,* Patrizia Villari, MD,* Patrizia Ferrera, MD,* Salvatore Riina, BS,* Fabrizio David, MD,* and Salvatore Mangione, MD†

This study first, provided further information on the outcome of an intrathecal treatment in highly opioid tolerant patients. Given the complexity of this kind of patients and the need to provide individually the best outcome, controlled studies are really difficult to perform and often provide information, which may be inferred by protocol limitation, not always ethically acceptable.

In patients who had received multiple trial of opioids and routes of administration, the intrathecal treatment started with an oral-intrathecal morphine conversion ratio of 100:1, and local anesthetics at the most convenient clinical doses, provided a rapid and long-term improvement of analgesia, with a decrease in adverse effects and opioid consumption until death.





Research Paper

PAIN

Maddalena Opioid Switching Score in patients with cancer pain

Sebastiano Mercadante^{a,*}, Alessio Lo Cascio^a, Claudio Adile^a, Patrizia Ferrera^a, Alessandra Casuccio^b

Abstract

Evaluation of opioid switching (OS) for cancer pain has not been properly assessed. The aim of this study was to assess an integrated score (Maddalena Opioid Switching Score) as a simple and repeatable tool to evaluate the outcomes of OS, facilitating the interpretation and comparison of studies, and information exchange among researchers. The integrated score took into account pain intensity, intensity of opioid-related symptoms, and cognitive function by using an author's formula. Physical and psychological symptoms were evaluated by the Edmonton Symptom Assessment Scale and Patient Global Impression (PGI) by the minimal clinically important difference. One hundred six patients were analyzed. Ninety-five patients were switched successfully, and 11 patients underwent a further OS and/or an alternative procedure. The Maddalena Opioid Switching Score significantly decreased after OS and was highly correlated to PGI of improvement (*P* < 0.0005). In patients with unsuccessful OS, no significant changes in the Maddalena Opioid Switching Score and PGI were observed. A significant reduction in Edmonton Symptom Assessment Scale items intensity was observed after OS. The Maddalena Opioid Switching Score resulted to be a sensitive instrument for measuring the clinical improvement produced by OS.

Keywords: Cancer pain, Opioid switching, Pain intensity, Chronic pain, Adverse effects, Palliative care





High doses of Fentanyl

900 mcg/h Transdermal fentanyl

Pain **20?/10**

Crying and complaining

confused

Titration with 300 mg of IV morphine unsuccessfully, bolus of methadone 40 mg was unsuccessful

Ketamine-midazolam infusion for 24 hours, progressively tapering the doses, while starting an infusion of 100mg of methadone

Two days after when the patient was awake, he was smiling and collaborating. Methadone doses were progressively increased with the patient responding to each step.

He was discharged 4 days after on optimal pain control with oral methadone 225 mg/day and

40 mg as needed



More common than in the past... Patients receive more aggressive treatments and are exposed to more risks of difficult pain problems

Pain due to local and diffuse pain metastases

Multiple courses of chemotherapy and radiotherapy

Multiple opioid-route switching (morphine-fentanyl-methadone-morphine and

Oral-IV-IT- IV+IT, local anesthetic switching)

Treatment required to control pain at the last admission:

INTRATHECALLY

morphine 100 mg, fentanyl 0.5 mg,

lidocaine 400 mg

Intrathecal lidocaine for breakthrough pain

INTRAVENOUSLY

Ketamine 600 mg

methadone 160 mg,

ketorolac 90 mg

Intermittent infusion of midazolam





M 49 yrs, colon-rectum, MTS lung, bones bilateral nephrosomies, ileostomy

Neuropathic component and bone pain biochemistry: bilirubin 2.8 mg/dl



Fentanyl 175 mcg/dday Eptadone iv 60 90 methadone 120

pregabalin 100

duloxetine 60



36

methadone 90

hydromorphone

Adverse effects, poor analgesia

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Spinal analgesia

Oral Methadone	36
IT bupivacaine	30
IT morphine	10

IT morphine



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After the journey in acute palliative/supportive care unit

Patient was considered non trasferable at home due to the complex treatment

Discharged hospice with:

- IT bupivacaine-morphine mixture
- Methadone
- Well controlled pain



- During hospice admission:
- Aggraviation of pain with hyperexpression with existential distress (feeling of imminent death)
- Spouse allowed to stay in hospice
- Allowed visit of sons
- Well control, conscious sedation
- Staying 20 days..
- Died without palliative sedation
- Aggressive pain management.....



When the game is hard, more complex weapons are needed

Sebastiano Mercadante <a>[b], ^{1,2} Claudio Adile, ¹ Patrizia Ferrera, ¹ Fausto Giuliana²

M, 60 yrs with liver tumor who had previously received radiotherapy to the pelvis and vertebral sites. Receiving buprenorphine 70 µg/hour and pectin fentanyl nasal spray 400 µg as needed for pain graded as 8/10 with frequent peaks of 10/10. Intravenous titration up to 15 mg oxycodone, continuous infusion of oxycodone at 80 mg/ day, progressively increased to 200 mg/day, then converted to oral oxycodone 400 mg/day.

Six months later worsening pain (9/10), despite increasing oxycodone to 600 mg/ day with pregabalin 100 mg/day. RMN = diffuse bone metastases. Titration with IV methadone 10 mg, followed by 60 mg/day, then converted to oral methadone 90 mg/day, progressively increased to 330 mg/day, unsuccessfully, despite a burst of ketamine–midazolam given for 2 consecutive days (100 mg and 15 mg/day, respectively).

Short report

BMJ Supportive & Palliative Care Cancer survivors: - long-term opioid therapy – the challenge. BMJ Support Palliat Care, 2022

She received multiple opioid rotations or some more complex treatments, including burst of ketamine and midazolam, which allowed to maintain an acceptable pain control for 12 yrs, despite her poor compliance. With opioid rotations the oral morphine equivalents (OME) doses changed from 40 mg/day (8 mg of hydromorphone) to 180 mg/day (36 mg of hydroxymorphine), (OEI 0.021 mg/day, 0.074%/day) in 4670 days.

BMJ Supportive & Palliative Care

BMI

A high level of knowledge, experience, and assessment is mandatory to implement of pain management among survivors.



Cancer pain management and maintenance therapy



BMJ Supportive & Palliative Care

BMJ

In June 2022 nivolumab was prescribed but due to the progression of disease he was then prescribed paclitaxel, and put on the waiting list for local radiotherapy.

Due to increasing levels of pain and clinical deterioration, he was referred to a home care program. The attending home palliative care physician referred him to an acute supportive palliative care unit (ASPCU) for a difficult pain syndrome, unmanageable at home. On admission, physical examination finding showed a large supra-clavicular neck mass with tendency to ulceration and a mixed somatic-neuropathic pain



Syndrome of severe intensity (8/10 with frequent peaks of 10/10). Imaging studies showed a progression of disease, involving muscles and vessels of the neck.

The **CAGE** (cut, annoyed, guilty, eye opener) test for drugs was positive (4/4). The Karnofsky status was 50 and the Memorial Delirium Assessment scale (MDAS) was 5. He also manifested high levels of anxiety, depression, and poor sleep. Former addict on MTT for 30 years. The last methadone dose prescribed was 100 mg daily, although he was also taking an extra dose of 50 mg from his weekly prescribed reserve (total 150 mg/day).

A decision was made to split the patient's total home methadone dose into 60 mg three times a day (180 mg/day) with intravenous morphine 50 mg as needed for breakthrough pain.

The day after optimal pain relief with significant reduction in other symptoms.

He was discharged home on the 4th day. In follow-up phone contacts with the home care physician, the patient reported very good pain control, with no use of breakthrough medications, and no relevant problems, unless an abscess of the neck mass, requiring antibiotic therapy and frequent medications.



BA, 74 yrs, Small cell lung cancer

LN and pleural effusion, MTs liver, bone MTs c6, C9, T3, ribs: 6-7 dx,2,5,7,8 sn, pelvis, femurs RT on T12

On Oxycodone 40 mg/day







A complex visceral pain

F 47 yrs, ovarium cancer, pelvic involvement, lower abdominal and perineal pain

On:

TD fentanyl 150 mcg/h morphine sc 20 mg x 6 SL fentanyl 300 mcg as needed Paracetamol 500 x 3

Pain 10/10, no signs of overexpression

- Switched to intravenous methadone 45 mg and increasing the doses unsuccessfully
- Amitryptiline 25 mg
- Ketamine-midazolam burst for two days
- Methadone 75 mg/day
- uncontrolled pain



 Proposal for hypogastric plexus block and Walther ganglium block







The Combination of Superior Hypogastric Plexus Block and the Block of the Ganglium Impair in a Patient With Abdominal and Perineal Pain Poorly Responsive to Opioids



Journal of Pain and Symptom Management

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P D A De In Dr N A W WB

Fig. 1. a) ESAS before performing the blocks (see text); b) ESAS on the day after the blocks. P = pain; D = dyspnea; A = anxiety; De = depression; I = insomnia; D = drowsiness; N = nausea; A = appetite; W = weakness; WB = well-being; ESAS = Edmonton Symptom Assessment Scale. The gray area is the breakthrough pain intensity.

The management of difficult pain requires high level of competence and knowledge...

...as extreme conditions do not fit usual recommentations which should be reserved to primary care Quando non sei sicuro del tuo stile ... ricordati che Superman porta le mutande sopra i pantaloni.

Knowledge is the way of care

Balance is the Key to Life



STUPOR MUNDI PALERMO 18-20 APRIL 2024



Due to progressive deterioration and the high level of distress, the patient was transferred to the adjacent **hospice**, also to allow the ongoing presence of his wife, which was prohibited in ASPCU, due to COVID-19 restrictions. Switched to **oral hydromorphone 256-384** mg7day with no improvement. The

addition of lidocaine 400 mg/day intravenously

IT catheter at T10 level, IT continuous infusion of morphine 2 mg/day and bupivacaine 25 mg/ day (in a volume 2 mL/hour). **Morphine 120 mg intravenously and midazolam 2 mg were given for breakthrough pain**. Hydromorphone dose was progressively tapered down.

In the subsequent days, the daily dose of **IT morphine dose** was increased up to **4 mg/day**, as well as the infusion volume (3 mL/hour). Intravenous dexamethasone 4 mg and oral duloxetine 30 mg were added.

Pain control was achieved with no specific adverse effects.

Procedural pain for hygiene-dressing manoeuvres was prevented by **midazolam 3 mg**.

The patient and his wife were happy with symptom control and the warm atmosphere of the hospice provided by the staff.

The level of communication was optimal.

In the subsequent 2 months, IT doses of the drug combination were progressively changed, each time successfully. Breakthrough pain was treated with intravenous morphine 200 mg or with IT boluses of bupivacaine

5 mg, successfully. The IT morphine-bupivacaine

ratio was changed (12 mg/day and 70 mg/day, respectively),

while adding IT methadone 10 mg and an

intravenous oxycodone infusion of 200 mg/day. The

global volume rate was set at 4 mL/hour.

The patient and his wife were grateful to the entire staff who did their utmost care for them.

70 days after hospice transfer, the patient developed delirium and existential distress; he was not responsive to neuroleptic drugs and required palliative

sedation that was performed with midazolam 45 mg/

day. The patient died peacefully the day after.



 \geq

D. Antonino, 42 anni

Ka sigma non operato avanzato, infiltrante di entrambe le ali sacrali (maggiore a dx) dal mese di marzo 2022, dolore a carico di anca destra.

15/06/2022 TC rachide lombosacrale: osteolisi a livello di emisacro di destra.

30/06/2022 visita oncologica: adeguamento terapia antalgica c/o ospedale di Trapani.

28/06/2022 TC total body: destrutturazione ossea a livello di entrambe le ali sacrali.

biopsia TC guidata del suddetto tessuto con esito negativo.

25/07-22/08/2022 Ricovero presso Oncologia Maddalena. E' stata adeguata la terapia antalgica inizialmente con morfina infusionale e successivo passaggio a fentanyl TD e morfina al bisogno. E' stata effettuata una agobiopsia TC guidata della lesione ossea sacrale con diagnosi istologica di adenocarcinoma con aree di necrosi e differenziazione immunoistochimica di tipo intestinale. E' stata effettuata una colonscopia con riscontro di eteroplasia del sigma con diagnosi istologica definitiva di adenocarcinoma infiltrante tessuto fibroso.

In data 05-06/08 e in data 18-19/08 sono stati somministrati i primi due cicli di chemioterapia con schema **FOLFOX**-4.02/09-03/09/22 è stato somministrato il III ciclo di chemioterapia sec.schema FOLFOX-4.16-17/09/2022: IV ciclo di chemioterapia sec.schema FOLFOX-4. 30/09-01/10/22 V ciclo di chemioterapia sec.schema FOLFOX-4.

19-28/10/2022 **RT** ad intento palliativo sintomatico su sacro con tecnica 3DCRT fotoni X da 18 MV dose 4 Gyfr>20Gy

Paziente in stato avanzato/terminale di malattia, con difficoltà di gestione domiciliare (sindrome dolorosa complessa), attualmente in terapia infusionale/al bisogno con eptadone, per il quale è stata avviata la procedura di dimissione complessa per ricovero in hospice.

Transferred from ASPCU to hospice on **Nov 25**: IV methadone 110 mg Duloxetine 30 mg Ibuprofene 400 mg x 2 Iv methadone 15-18 mg as needed (7 BTPs)

Increasing doses of IV Methadone Adding midazolam and dexmedetomidine 600 mcg, ketamine 200 mg IV morphine 400-600 mg Octreotide-metoclopramide-dexamethasone for GI subostruction symptoms

IV morphine 2000 mg BTP: IV morphine 480 mg + midazolam 2 mg

Dec 16

Intrathecal therapy with morphine 15 mg + bupivacaine 25 mg IV morphine 480 mg + IV ketamine 200 mg + midazolam 25-30 mg BTP: IV morphine 200 mg + midazolam 2,5 mg

14- may- 2023

IT Morphine 25 mg + bupivacaine 25 mg IV methadone 430 mg (ketamine unavailable) Hydromorphone 112 mg Haloperidol 6 mg Duloxetine 60 mg Olanzapine 5 mg Octreotide 0.6 mg + Dexametasone 16 mg

BTP: IV morphine 420 mg+ Midazolam 2,5 mg

In 6 months: Normal intake Good quality of life





15-may Dysphagia

Stop duloxepine olanzapine hydromorphone IT Morphine 25 mg + bupivacaine 25 mg IV methadone 430 mg IVOxycodone 420 mg Haloperidol 6 mg Octreotide 0.6 mg + Dexametasone 16 mg

20 may

No pain, high distress, Start PS midazolam 225 mg/day, Chlorpromazine 300 mg/day