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# Expected cost and cost considerations associated with opioid rotation for chronic non-cancer pain: A simulation model

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their pain. Their pain intensity during last episode of pain was 5 on a 10-point Numeric Rating Scale (NRS). 39% of the respondents had moderate pain (NRS = 5–7), 43% had severe pain (NRS = 7), 67% had headaches, 22% had back pain. 96% of the acute pain sufferers were using drugs for last three months. 96% of them were taking Aspirin® (acetyl salicylic acid), 91% Vermidon® (paracetamol), 90% Novalgin® (Dipyrone), and 80% Apranax® (naproxen sodium). **CONCLUSION:** Six percent of Turkish adults had acute pain. Sixty-seven percent of the respondents who had acute pain had accompanying disease causing the pain. Pain is a major health care problem in Turkey that needs to be evaluated and researched in depth.

#### PAIN—Cost Studies

##### PPN2

#### A COST MINIMIZATION ANALYSIS OF IV BOLUS VERSUS IV INFUSION DICLOFENAC IN POST-OPERATIVE PAIN

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**OBJECTIVES:** There are two forms of injectable IV diclofenac available (Dyloject bolus and Voltarol infusion). We conducted a cost minimization analysis to determine the total cost of each treatment strategy. **METHODS:** A decision-analytic model was developed to estimate total treatment costs of IV bolus versus IV infusion diclofenac. The modeled population was patients who post-operatively would require injectable NSAIDs to control their pain. The model timeframe was for the duration that a patient required post-operative pain management with injectable medication. The model inputs included the actual/estimated cost of medicines, the cost of the IV administration process (staff time and consumables), and the cost of treating adverse events (staff time, medicines and consumables). The unit costs and resources are based on UK data. The results are expressed as Pounds Sterling and as average cost per patient. One-way sensitivity analyses were also conducted on key parameters. **RESULTS:** The total cost of treating post-operative pain was less with IV bolus diclofenac (Dyloject) than with IV infusion diclofenac (Voltarol). Diclofenac IV bolus cost a mean  $\leq 27.84$  per patient overall versus diclofenac IV infusion mean cost of  $\leq 78.61$  per patient. The difference in overall cost is attributable to the cost of NSAIDs (IV bolus  $\leq 12.19$  versus  $\leq 1.69$  IV Infusion), the cost of administering the NSAID (IV bolus  $\leq 9.72$  versus  $\leq 49.73$  IV Infusion) and the cost of consumables (IV bolus  $\leq 1.40$  versus  $\leq 16.72$  IV infusion). The difference in the costs of rescue medication (IV bolus  $\leq 2.48$  versus  $\leq 6.14$  IV infusion) and of treating adverse events (IV bolus  $\leq 2.061$  versus  $\leq 4.33$  IV infusion) was less. One-way sensitivity analyses show the results are sensitive to the cost of staff time and consumables. **CONCLUSION:** Diclofenac IV bolus (Dyloject) is cost saving relative to diclofenac IV infusion (Voltarol) in the treatment of post-operative pain.

##### PPN3

#### EXPECTED COST AND COST CONSIDERATIONS ASSOCIATED WITH OPIOID ROTATION FOR CHRONIC NON-CANCER PAIN: A SIMULATION MODEL

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**OBJECTIVES:** To develop an expected-cost model to examine the impact of opioid rotation among patients with chronic non-cancer pain from the payor perspective **METHODS:** A decision tree was developed depicting pathways a patient may follow over

the course of 1 year while taking long acting opioids. Up to 2 switches and 5 dose adjustments were possible for each of the three treatment arms: 1) MS Contin ER switch to OPANA ER; 2) MS Contin ER switch to OxyContin ER; and 3) OPANA ER switch to OxyContin ER for patients where morphine is not an appropriate first line treatment option. Cost data included drug acquisition costs for extended release (ER) and immediate release (IR) opioids, physician contact reimbursement for pain specialists and primary care physicians. Estimated rates for side effects were assumed similar for the most frequently reported side effects (constipation, nausea, somnolence and sedation) and were applied to all treatment arms. **RESULTS:** A total of 149 possible pathways of care were evaluated among the 3 treatment arms. Assuming a BID regimen, expected-cost range for treatments 1, 2, and 3 were: \$3426–\$4299, \$3829–\$5073, and \$4556–\$5098, respectively. IR cost contribution of the total expected-cost for treatment arms 1, 2, and 3 amounted to 17%, 21% and 24%, respectively, and was dependent on the total daily ER dose. **CONCLUSION:** Opioid rotation is thought to be the result of the need to switch opioids when a therapy is not well tolerated by the patient. Having an effective alternative for rotation/switching if first line treatment fails has the potential to reduce incremental down stream costs by decreasing physician contacts due to dose adjustment or the need for further switching. Furthermore, the lack of effective pain management combined with non-tolerated side effects may also require the need for additional medications for pain (IR) and side effects.

##### PPN4

#### HEALTH, NON-HEALTH RESOURCES UTILIZATION AND COSTS OF TREATING REFRACTORY PAINFUL RADICULOPATHY IN PRIMARY CARE SETTING (PCS) UNDER ROUTINE MEDICAL PRACTICE IN SPAIN

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**OBJECTIVES:** To analyze health and non-health resources utilization and derived costs of treating refractory painful Radiculopathy followed in PCS under routine medical practice. **METHODS:** A 12-weeks cross-sectional and retrospective analysis was carried out in year 2006 in a whole-nation representative sample of PC centres. Men and women above 18 years, with chronic pain (6-month or more) due to cervical (17%) or lumbar (83%) radiculopathy, refractory to, at least, one previous analgesic were included in the analysis. Health resources included all-type medical visits, hospitalizations, complementary test and pharmacological and non-pharmacological therapies. Non-health included wages losses due to loss-work-days equivalents (LWDE = absenteeism days + days working with reduced productivity due to pain). Pain severity was measured by McGill-pain scale. **RESULTS:** One-thousand-four-hundred-fifty-two subjects [55.8% women, 56.7 (12.5) years] with cervical or lumbar radiculopathy were analyzed. Last-week mean pain severity was 71.4 (15.1) mm with 61.4% declaring the pain as severe or worst the day of collecting data. Previous mean (SD) number of drugs was 2.6 (1.4), with a 24.0% on one-drug only; 81% on NSAIDs, 47% on paracetamol, 32% on opioids, 17% on muscle-relaxants, 9% on antiepileptics, and 7% on antidepressants. Quarterly mean LWDE was 41.1 (28.6) days. Medical visits average per trimester was 9.1 (6.2), with 3.9% declaring one-hospitalization. Quarterly total mean cost was €2970 (2114); €1032 (1207) direct health cost and €1938 (1490) indirect cost. **CONCLUSION:** In the primary care setting, health and