

EFFECT OF MORPHINE VERSUS TRAMADOL ON THE IMMUNE RESPONSE DURING MANAGEMENT OF PATIENTS WITH CHRONIC CANCER PAIN

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Abstract

Background: Whilst the inter-relationship between opioid analgesics and the immune system is not a simple one and may appear to vary depending on the opioid studied, dose range of the opioid, species in which studied, immunological parameters measured and the time course of the study, increasing availability of data indicate that opioid prescription and usage is lagging behind the available evidence of significant opioid-induced immunosuppression in the human in a variety of disparate situations. **Methods:** Seventy patients complaining of cancer related pain were randomly assigned into two groups thirty five patients in each: Tramadol group treated with tramadol hydrochloride 100- 200 mg three times daily and followed up. Morphine group of patients: who were treated with controlled release morphine sulphate tablets 30 – 60 mg twice daily and followed up. Systolic and diastolic arterial blood pressure, mean heart rate, mean respiratory rate, were measured. Pain was assessed by VRS and psychological state of the patients was assessed by using General Practitioner Assessment of Cognition (GPCOG) Score. The daily activity of the patients was assessed by The Lawton Instrumental Activities of Daily Living Scale were reported before starting therapy, 2, 4, and 6 weeks later. Laboratory study was performed by measuring serum level of IL-2, and INF- γ before treatment, 2week and 6 weeks after. **Results:** There was significant difference in respiratory rate, VRS and psychological state of the patients between the two groups .The concentration of IL-2 in the serum of patients in morphine group was decreased significantly than that in the pre-treatment phase (174.86 ± 31.91 pg/ml, 124.44 ± 33.68 pg/ml, 110.2 ± 22.46 pg/ml) respectively while in the tramadol group increased than the pre-treatment phase (177.14 ± 20.83 pg/ml, 217.87 ± 24.01 pg/ml, 219.58 ± 21.03 pg/ml) and these changes were statistically significant. Concentration of INF- γ in the serum of patients of morphine group was found to decrease significantly than that in the pre-treatment phase (106.82 ± 4.52 pg/ml, 97.62 ± 10.17 pg/ml, 95.89 ± 9.59 pg/ml) respectively and while it increased significantly in the tramadol group than that in the pretreatment phase (101.72 ± 2.99 pg/ml, 125.51 ± 8.71 pg/ml, 139.93 ± 6.35 pg/ml) respectively. Both IL-2 and INF- γ were significantly higher in tramadol group than morphine group of patients along studied periods after the pretreatment baseline value which showed no significant changes between both groups. **Conclusion:** Significant changes were achieved in the immune response and adequate pain relief in cancer patient treated by either tramadol, or morphine with fewer side effects than expected.

Keywords: Morphine, Tramadol, Immune response, and cancer pain.