

## Oral Presentation - 22

## Tramadol is Superior to Methadone in Black Widow Spider Envenomation: a Randomized Control Trial

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### Abstract

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**Introduction:** Black widow spider (BWS) bites, latrodectism, is relatively common in Northeastern Iran (1). The bites are characterized by generalized pain, autonomic disturbances such as tachycardia, diaphoresis and chilling. Opioids are used commonly to control the pain in such cases. Specific antivenom is not available in Iran. This study aimed to compare tramadol with methadone in controlling the symptoms of latrodectism.

**Methods:** All cases of BWS bites between 1 July 2011 and 1 Aug 2013 that were referred to the Imam Reza Hospital, Mashhad, Iran were taken into account. Pain, diaphoresis and chills were measured via a validated scoring system. Patients were divided into two groups: (i) tramadol 50 mg I.M. and (ii) methadone 5 mg S.C. Measurements were performed an hour before and after injection. Other medications were similar.

**Results:** In total, 28 cases were included. In the tramadol group, mean pain score (standard deviation, min-max) before and after injection were 4.1 (0.7, 3-5) and 1.9 (0.8, 1-3) respectively ( $p < 0.001$ ). In these cases diaphoresis score were 2.3(0.7, 1-3) and 1.8(0.7, 1-3) ( $p < 0.001$ ).

In the methadone group, pain before and after injection was 4.1(0.7, 3-5) and 3.54(0.8, 2-5) ( $P = 0.013$ ). Diaphoresis score in these cases were 2.6(0.5, 2-3) and 2.5(0.5, 2-3) respectively which was not statistically different. Both medications showed no effect on chilling. No side effects of opioids were observed in these cases.

**Conclusion:** Tramadol in comparison to methadone is superior in controlling pain as well as diaphoresis in *Latrodectus* envenomations. These findings are consistent with the fact that tramadol is more potent and more peripheral analgesic. The known inhibitory effect of tramadol on peak transfer of Ca at membrane is sensible to explain better impact on diaphoresis that is related to entrance of extracellular Ca<sup>2+</sup> to the presynaptic terminal.

### Reference:

(1) Afshari R, Khadem-Rezaiyan M, Balali-Mood M, Spider bite (latrodectism) in Mashhad, Iran. 2009, 28(11):697-702.