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# Effect of Bacopasides on acquisition and expression of morphine tolerance.

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## Abstract

Opioids are extensively used for the management of both chronic malignant and non malignant pains. One major serious limitation associated with chronic use of opioids is the development of tolerance to its analgesic effect. The effect of Bacopa monnieri, a renowned ayurvedic medicine for acquisition and expression of morphine tolerance in mice, was investigated. Bacopa monnieri, n-Butanol fraction was analyzed on High performance liquid chromatography (HPLC), for Bacopaside A major components i.e. Bacoside A(3), Bacopaside II and Bacosaponin C. Antinociceptive effect of n-Butanol extract of Bacopa monnieri (n Bt-ext BM) (5, 10 and 15 mg/kg) was assessed on hot plate. Effect of different doses of n Bt-ext BM on morphine antinociception was also assessed. n Bt-ext BM was also screened for development of tolerance to antinociceptive effect of Bacopa monnieri by administering 15 mg/kg n Bt-ext BM for seven days. Tolerance to morphine analgesia was induced in mice by administering intraperitoneally (I.P.) 20 mg/kg morphine twice daily for five days. Acute and Chronic administration of 5, 10 and 15 mg/kg n Bt-ext BM significantly reduced both expression and development of tolerance to morphine analgesia in mice. Additionally, Bacopa monnieri was found to enhance antinociceptive effect of morphine in intolerant animals. However, no tolerance to Bacopa monnieri antinociceptive effect was observed in seven days treatment schedule. These findings indicate effectiveness of Bacopa monnieri for management of morphine tolerance.

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