

## Effect of Dexmedetomidine on Postoperative Analgesia, Inflammatory Response, Immunity, and Coagulation Function of Patient after Spinal Surgery

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**SUMMARY.** This study aimed to investigate the effect of dexmedetomidine on postoperative analgesia, inflammatory response, immunity and coagulation function of patient after spinal surgery. Seventy patients undergoing spinal surgery were divided into control group and dexmedetomidine groups, 35 cases in each group, which received postoperative patient-controlled intravenous analgesia using sufentanil and dexmedetomidine combined with sufentanil, respectively. Results showed that, at postoperative 24 h and 48 h, compared with control group, in dexmedetomidine group the Visual Analogue Scale (VAS) score was significantly decreased, the serum tumor necrosis factor- $\alpha$ , interleukin 6 and interleukin 1 $\beta$  levels were significantly decreased, the interleukin 10 level was significantly increased, the CD3<sup>+</sup> and CD4<sup>+</sup> cell percentages and CD4<sup>+</sup>/CD8<sup>+</sup> ratio were significantly increased, the activated partial thromboplastin time, prothrombin time and thrombin time were significantly increased, and the plasma fibrinogen level was significantly decreased (all  $P < 0.05$ ). In conclusion, dexmedetomidine combined with sufentanil can relieve the postoperative pain, reduce the inflammatory response, and improve the immune and coagulation functions in patients after spinal surgery.

**RESUMEN.** Este estudio tuvo como objetivo investigar el efecto de la dexmedetomidina sobre la analgesia postoperatoria, la respuesta inflamatoria, la inmunidad y la función de coagulación del paciente después de la cirugía espinal. Setenta pacientes sometidos a cirugía de columna se dividieron en grupos de control y grupos de dexmedetomidina, 35 casos en cada grupo, que recibieron analgesia intravenosa controlada por el paciente postoperatoria, usando sufentanil y dexmedetomidina combinados con sufentanil, respectivamente. Los resultados mostraron que, en el postoperatorio de 24 y 48 h, en comparación con el grupo control, en el grupo de dexmedetomidina, la puntuación VAS (Visual Analogue Scale) disminuyó significativamente, los niveles séricos de factor de necrosis tumoral  $\alpha$ , interleucina 6 e interleucina 1 $\beta$  disminuyeron significativamente, el nivel de interleucina 10 fue aumentó significativamente, los porcentajes de células CD3<sup>+</sup> y CD4<sup>+</sup> y la relación CD4<sup>+</sup>/CD8<sup>+</sup> aumentaron significativamente, el tiempo de tromboplastina parcial activada, el tiempo de protrombina y el tiempo de trombina aumentaron significativamente, y el nivel de fibrinógeno en plasma disminuyó significativamente (todos  $P < 0.05$ ). En conclusión, la dexmedetomidina combinada con sufentanil puede aliviar el dolor postoperatorio, reducir la respuesta inflamatoria y mejorar las funciones inmunes y de coagulación en pacientes después de una cirugía espinal.

**KEY WORDS:** analgesia, coagulation, dexmedetomidine, immunity, inflammatory response, spinal surgery.

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