Effect of dexmedetomidine on sevoflurane dosage and serological indicators of laparoscopic gastric cancer operation

ZHAO Zheng-an¹, FANG Qin², WANG Yan-lin²

(¹ Department of Anesthesiology, People's Hospital of East Lake District, Wuhan 430040; ² Department of Anesthesiology, South and Centre Hospital of Wuhan University, Wuhan 430071, China)

[Foundation Project]: Supported by clinical research project of Health Bureau of Wuhan City (grant No. WZ09D11)

[Author]: ZHAO Zheng-an (1963-), Female, Henan Province, Deputy chief physician, M/B., Tel: 027-83299320, 13387579679, E-mail: zhao_tieyan@163.com.

[Correspondence to]: WANG Yan-lin, Professor, Ph. D. candidate supervisor.


View from specialist: It is creative, and of certain scientific and educational value.

[ABSTRACT] Objective: To study the effect of dexmedetomidine on sevoflurane dosage and serological indicators of laparoscopic gastric cancer operation. Methods: patients received laparoscopic radical gastrectomy in our hospital from 2012.4-2014.5 were enrolled randomly divided into two groups according to different anesthesia method. Observation group received dexmedetomidine combined with conventional intravenous inhalation anesthesia, control group received routine intravenous inhalation anesthesia. Then sevoflurane amount, oxidative stress index and erythrocyte glucose metabolism enzyme activity were compared. Results: (1) sevoflurane dosage: 10 min after dexmedetomidine infusion (T1), pneumoperitoneum establishment (T2), 30 min after pneumoperitoneum (T3), inhalation sevoflurane concentration of observation group were lower than those of control group; (2) oxidative stress injury: plasma MDA content of observation was lower than that of control group; GSH, SOD were lower than those of control group; (3) erythrocyte glucose metabolism enzyme activity: erythrocyte PFK content of observation group was higher than that of control group; G-6PD, AR content were lower than those of control group. Conclusion: Dexmedetomidine assisted intravenous inhalation combined anesthesia are helpful to reduce sevoflurane amount, alleviate oxidative stress, improve erythrocyte glucose metabolism; it’s an ideal operation method in laparoscopic gastric cancer operation.

[KEY WORDS] Dexmedetomidine; laparoscopic gastric cancer operation; oxidative stress; erythrocyte glucose metabolism