

Table 1. Summary of studies on gastric cancer that compare TIVA with GA

Study (Author/year)	Method	Intervention	Anaesthesia methods and/or anesthetic agents	Notes
Huang (2020) (3)	Retrospective	TIVA vs GA (None of the patients had epidural catheter)	TIVA(n=190) I=Propofol + Fentanyl + Lidocaine 2% + Rocuronium M: Propofol infusion + Fentanyl (Repetitive bolus) + Cisatracurium (Repetitive bolus) GA (n=218) I=Propofol + Fentanyl + Lidocaine + Rocuronium or succinylcholine M: Desflurane + Fentanyl (Repetitive bolus) + Cisatracurium (Repetitive bolus)	TIVA improved survival and reduced the risk of recurrence and metastasis during the 5-year follow up
Hong (2019) (8)	Retrospective	TIVA vs GA (5 major types of surgery evaluated) (Breast, colon, liver, lung, stomach)	TIVA(n=903) I=Propofol + Remifentanyl M: Propofol infusion + Remifentanyl infusion GA (n=1304) I=Propofol/Etomidate + Remifentanyl M:Remifentanyl/N20 + (Desflurane/Sevoflurane/Isoflurane)	There were no differences 5-year overall
Oh (2019) (4)	Retrospective cohort	TIVA vs GA (None of the patients had epidural catheter)	TIVA(n=769) I=Propofol + Remifentanyl M: Propofol infusion + Remifentanyl infusion GA (n=769) I=Remifentanyl+ (Desflurane/Sevoflurane) M:Remifentanyl+ (Desflurane/Sevoflurane)	Propofol based TIVA was not significantly associated decrease in the 1-year overall or cancer-related mortality
Zheng (2018) (7)	Retrospective Observational study	TIVA vs GA	TIVA(n=897) I= Midazolam + Propofol + Fentanyl M: Propofol infusion + Remifentanyl infusion Postoperatif analgesia: IV PCA (Fentanyl or Sufentanyl) GA (n=897) I= Midazolam + Propofol + Fentanyl M= Sevoflurane + Remifentanyl infusion Postoperatif analgesia: IV PCA (Fentanyl or Sufentanyl)	TIVA may be associated with improved survival

Table 2. Summary of studies on gastric cancer that compare GA with GA combined with epidural anesthesia/analgesia

Study (Author/ year)	Method	Intervention	Anaesthesia methods and/or anesthetic agents	Notes
Pei (2020) (1)	Retrospective	GA vs EGA	GA (n=97) Anestesthetic agents (No information) EGA (n=97) Anestesthetic drugs (No information) (Patients were matched according to the propensity score)	EGA did not show a significant reduction in the incidence of recurrence and/or metastasis
Wang (2019) (13)	Retrospective Randomized observer blinded study	GA vs EGA	GA (n=25) I=Midazolam + Propofol + Sufentanil+ cisatracurium M= Propofol + Remifentanil infusion Postoperatif analgesia: IV PCA (Sufentanil) EGA (n=25) I=Midazolam + Propofol + Sufentanil+ cisatracurium M= Propofol + Epidural PCA (Ropivacaine + Sufentanil) Postoperatif analgesia: Epidural PCA (Ropivacaine + Sufentanil)	EGA decreases immunosuppression gastric cancer resection
Wang (2017) (9)	Retrospective	GA vs EGA	GA (n=2856) I=Midazolam + Propofol + Fentanyl M= (Propofol/sevoflurane) + (Remifentanil infusion/Fentanyl) Postoperatif analgesia: IV PCA (Sufentanil or Fentanyl) EGA (n=1362) I= Anestesthetic drugs (No information) M=Anestesthetic drugs (No information) + Epidural anesthesia (Ropivacaine/Levobupivacaine infusion) Postoperatif analgesia: Epidural PCA (Ropivacaine/Levobupivacaine + Fentanyl)	EGA and Epidural PCA may be associated with the improved overall survival
Wang (2016) (10)	Retrospective	GA vs EGA	GA (n=116) I=Midazolam + Propofol +Sufentanil M= Propofol + Remifentanil infusion EGA (n=157) I=Midazolam + Propofol +Sufentanil M=Propofol + Epidural anesthesia (Ropivacaine or Levobupivacaine infusion)	EGA had no effect on the long term survival but younger patients who received EGA were more likely to have longer survival
Shin (2017) (11)	Retrospective	Epidural analgesia (PCA) vs IV analgesia (PCA)	GA with IV PCA (n=374) I= Anestesthetic agents (No information) M= Remifentanil+ Sevoflurane + N2O Postoperatif analgesia: IV PCA (Fentanyl) EGA with Epidural PCA (n=3425) I= Anestesthetic agents (No information) M= Remifentanil+ (Enflurane/Isoflurane) + N2O Postoperatif analgesia: Epidural PCA (Ropivacaine + Fentanyl)	Postoperative use of epidural analgesia was not found to be associated with reduced recurrence or mortality

Table 3. Summary of studies on gastric cancer cells with anesthetic agents in *in vitro* conditions

Jiang (2017) (2)	<i>In vitro</i>	Effect of muscle relaxant anesthetics on growth, migration and invasion	Cell culture + Rocuronium bromide Cell culture + vecuronium bromide Cell culture + cisatracurium besilate	Rocuronium bromide act as a stimulant of gastric cancer cell growth, migration and invasion <i>in vitro</i>
Yang (2017) (5)	<i>In vitro</i>	Effect of propofol on growth and survival of gastric cancer cells	Cell culture + Propofol treatment (Cell viability, migration and invasion assay, flow cytometry, quantitative real-time PCR, western blot analysis)	Propofol inhibits gastric cancer cell growth and induces cell apoptosis
Dan (2018) (6)	<i>In vitro</i>	Effect of local anesthetic bupivacaine on gastric cancer	Cell culture + Bupivacaine (Measurement of proliferation and apoptosis, boyden chamber migration assay, measurement of oxygen consumption rate, measurement of mitochondrial respiratory complex activity and ATP level, measurement of RhoA activity)	Bupivacaine has direct anti-cancer activity with the dominant inhibitory effects on gastric cancer migration rather than growth and survival