L'anestesista nel 2019 : semplice *erogatore di gas* o protagonista che influenza il futuro dei pazienti?

Dr Christophe Perruchoud

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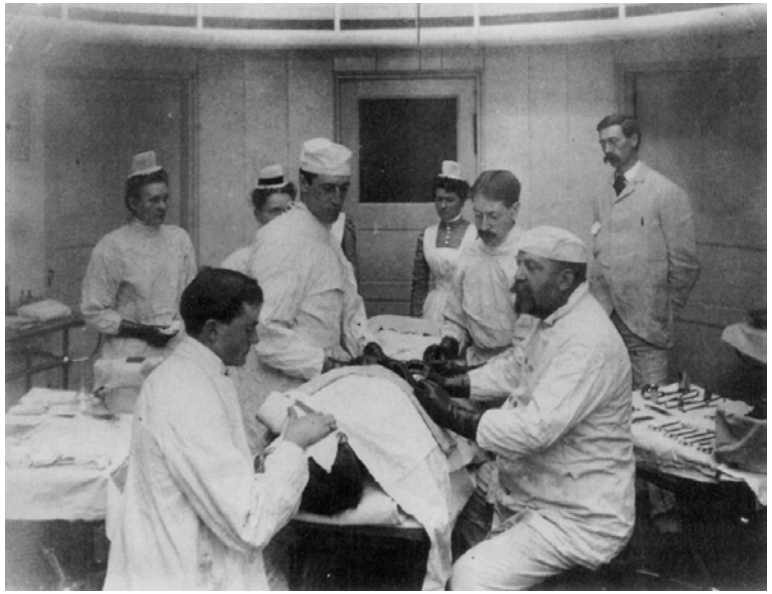
La Tour Hospital Geneva - Switzerland
Departement of Anaesthesiology and Pain Centre
University Hospital of Lausanne (CHUV) - Switzerland

L’anestesia è una disciplina giovane

- Nel 1910 fu creato il primo dipartimento di « eterizzatori » presso il Massachusetts General Hospital e l'American Society of Anesthetics (ASA) fu fondata nel 1936In Europa, l'Università Cattolica di Luven ha il merito di aver istituito il primo servizio di anestesia nel 1948
- La **Société Suisse d'Anesthésiologie** (SSAR) fu creata nel 1952.



L’anestesia è una disciplina giovane

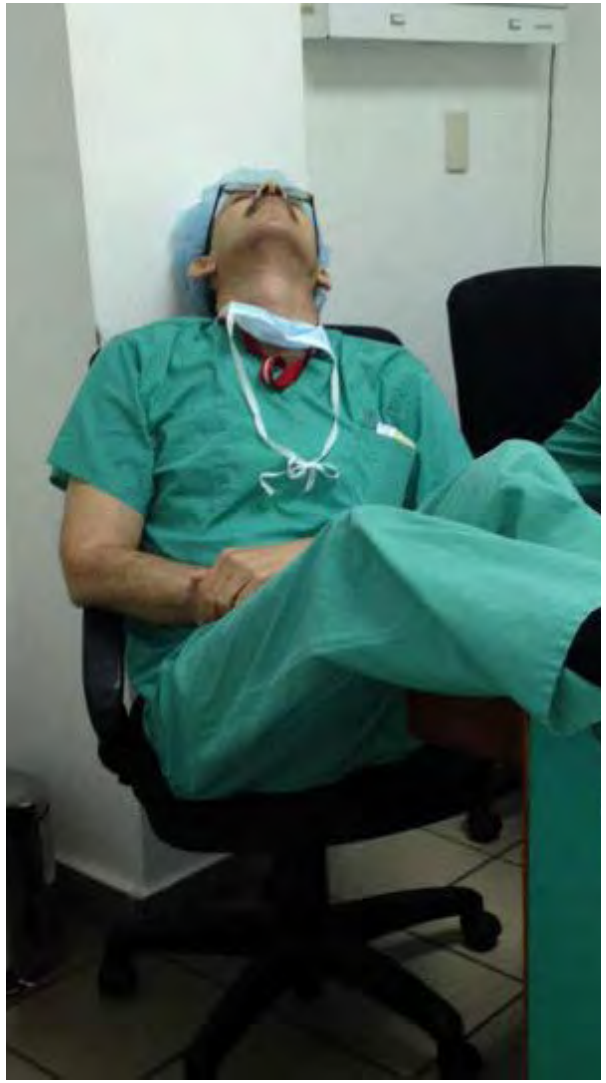
- In precedenza l'anestesia era affidata a ausiliari più o meno esperti o informati, sotto la responsabilità del chirurgo.
- Il dott. Cushing è stato il primo chirurgo a stipendiare un medico, Walter M. Boothby, come anestesista nella sua clinica di Boston.

Mortalità direttamente legata all'anestesia

1 decesso ogni 1500 anestesie

1 decesso ogni 250’000 anestesie

L’anestesista visto dal chirurgo…



L’anestesista visto dal chirurgo …

Perchè i chirurghi sono contenti quando operano un anestesista ?

« Perchè questa volta sono sicuri che resti in sala ! »

Qual’è la definizione di un anestesista ?

«È un tipo mezzo sveglio che sta guardando un altro tipo mezzo addormentato»

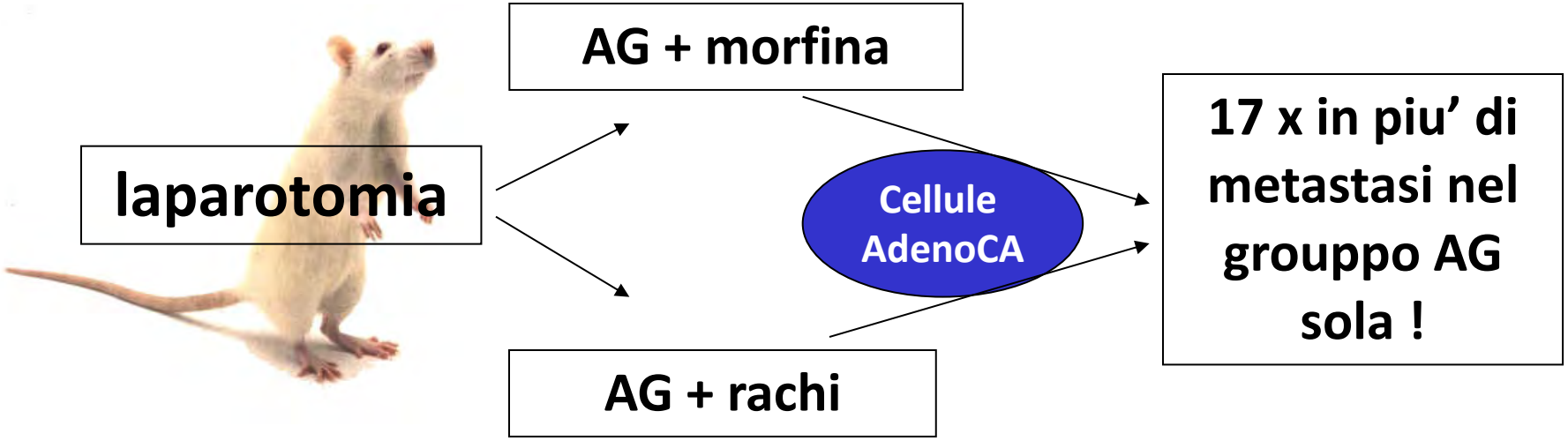
Qual è la prima cosa da fare quando un anestesista cade nel blocco operatorio ?

« Scioglierli le braccia »

L’anestesista, che super eroe !

Studio sperimentale

Attenuazione dell'effetto promotore del tumore del blocco spinale nei ratti.



Ben-Eliyahuet al. Anesthesiology 2001

Impatto della tecnica ?

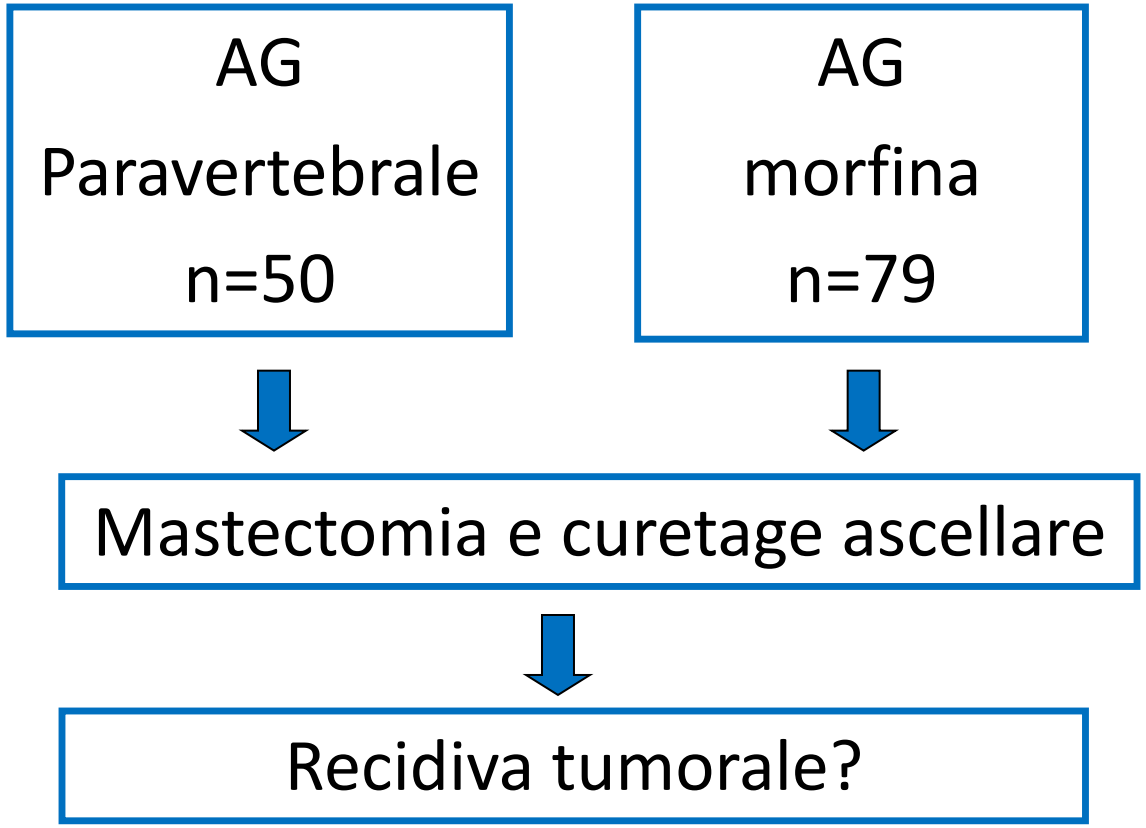
Can Anesthetic Technique for Primary Breast Cancer Surgery Affect Recurrence or Metastasis?

Aristomenis K. Exadaktylos, M.D., Donal J. Buggy, M.D., M.Sc., D.M.E., F.R.C.P.I., F.C.A.R.C.S.I., F.R.C.A.,† Denis C. Moriarty, F.C.A.R.C.S.I.,‡ Edward Mascha, Ph.D.,§ Daniel I. Sessler, M.D., Ph.D.‖*

- Studio **retrospettivo**
- 129 casi consecutivi sui 15 mesi
- Follow-up medio 32 ± 5 mesi

Exadaktylos et al. Anesthesiology 2006

Impatto della tecnica ?



Exadaktylos et al. Anesthesiology 2006

AC vs AG

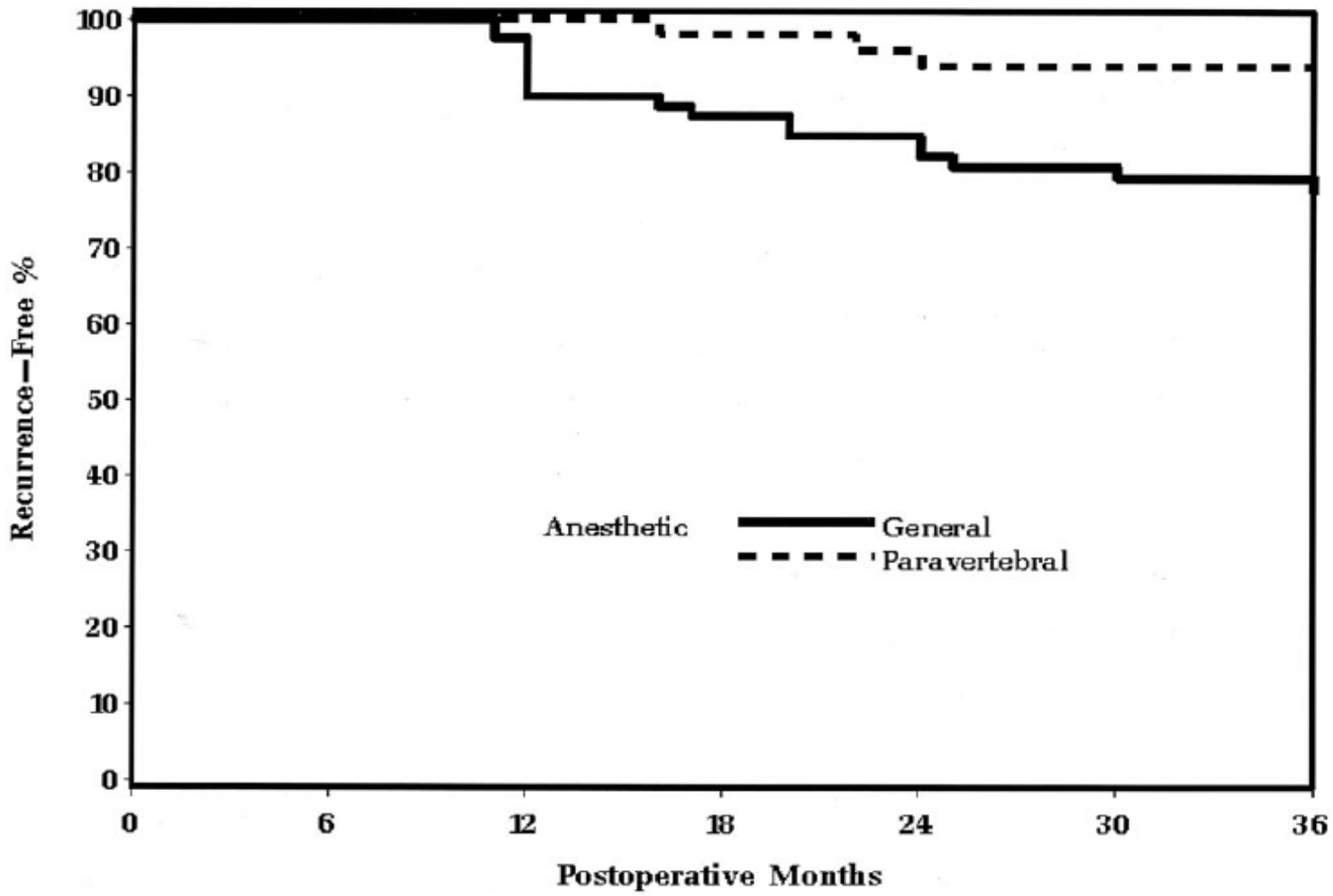
Table 3. Cancer Recurrence

	Paravertebral (n = 50)	General Anesthesia (n = 79)
Crude recurrence	3 (6)	19 (24)
Percent of patients recurrence-free at 24 months (95% CI)	94 (87–100)	82 (74–91)*
Percent of patients recurrence-free at 36 months (95% CI)	94 (87–100)	77 (68–87)†
Recurrence location		
Local or axillary nodes	1	11
Liver metastasis	1	3
Bone metastasis	1	3
Lung metastasis	0	2

Data are number (%) or Kaplan-Meier survival estimate (95% confidence interval).

Exadaktylos et al. Anesthesiology 2006

AC vs AG



Exadaktylos et al. Anesthesiology 2006

AC vs AG

Anesthesiology 2007; 107:354

Regional Block and Cancer Recurrence: Too Early to Tell

(…)

tases. If these findings are real, it would be the first demonstration that anesthesia *per se* protects from cancer recurrence—a true revolution.

(…)

In conclusion, the only study design able to reliably answer whether paravertebral block really protects from breast cancer recurrence is a randomized controlled trial. This should be done as soon as possible before an unproven hypothesis becomes a standard of practice in breast cancer surgery.

ACT vs AGT

Anesthesiology 2008; 109:180–7
Copyright © 2008, the American Society of Anesthesiologists, Inc. Lippincott Williams & Wilkins, Inc.

Anesthetic Technique for Radical Prostatectomy Surgery Affects Cancer Recurrence

A Retrospective Analysis

Barbara Biki, M.D., Edward Mascha, Ph.D.,† Denis C. Moriarty, M.D.,‡ John M. Fitzpatrick, M.D.,§ Daniel I. Sessler, M.D.,‖ Donal J. Buggy, M.D., M.Sc., F.R.C.P.I., F.C.A.R.C.S.I., F.R.C.A.#*

- Studio retrospettivo dal 01.1994 – 12.2003
- 225 pazienti operati per una prostatectomia radicale

ACT vs AGT

AGT + oppiacei
n=123

ACT
n=102

↓ ↓

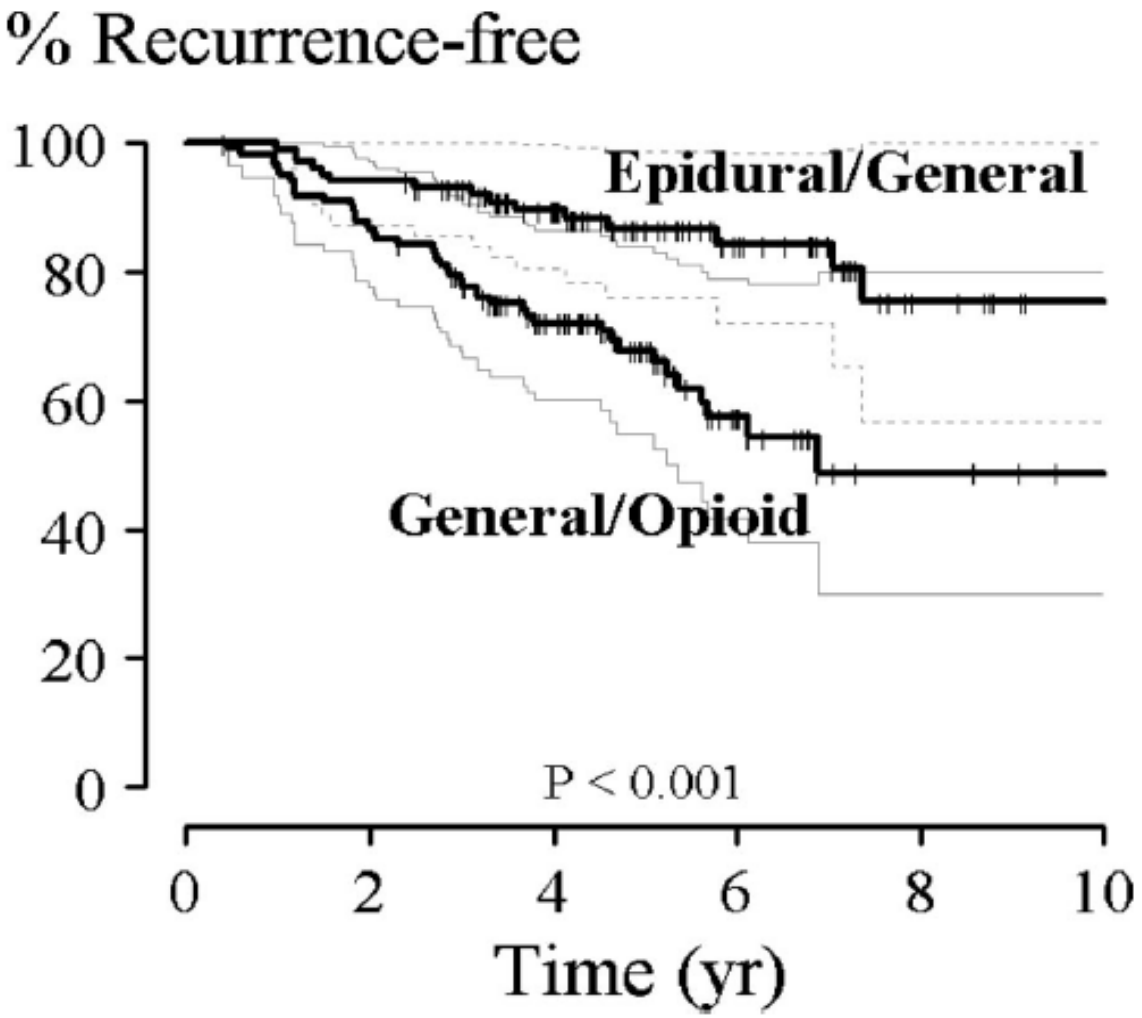
Prostatectomia radicale

↓

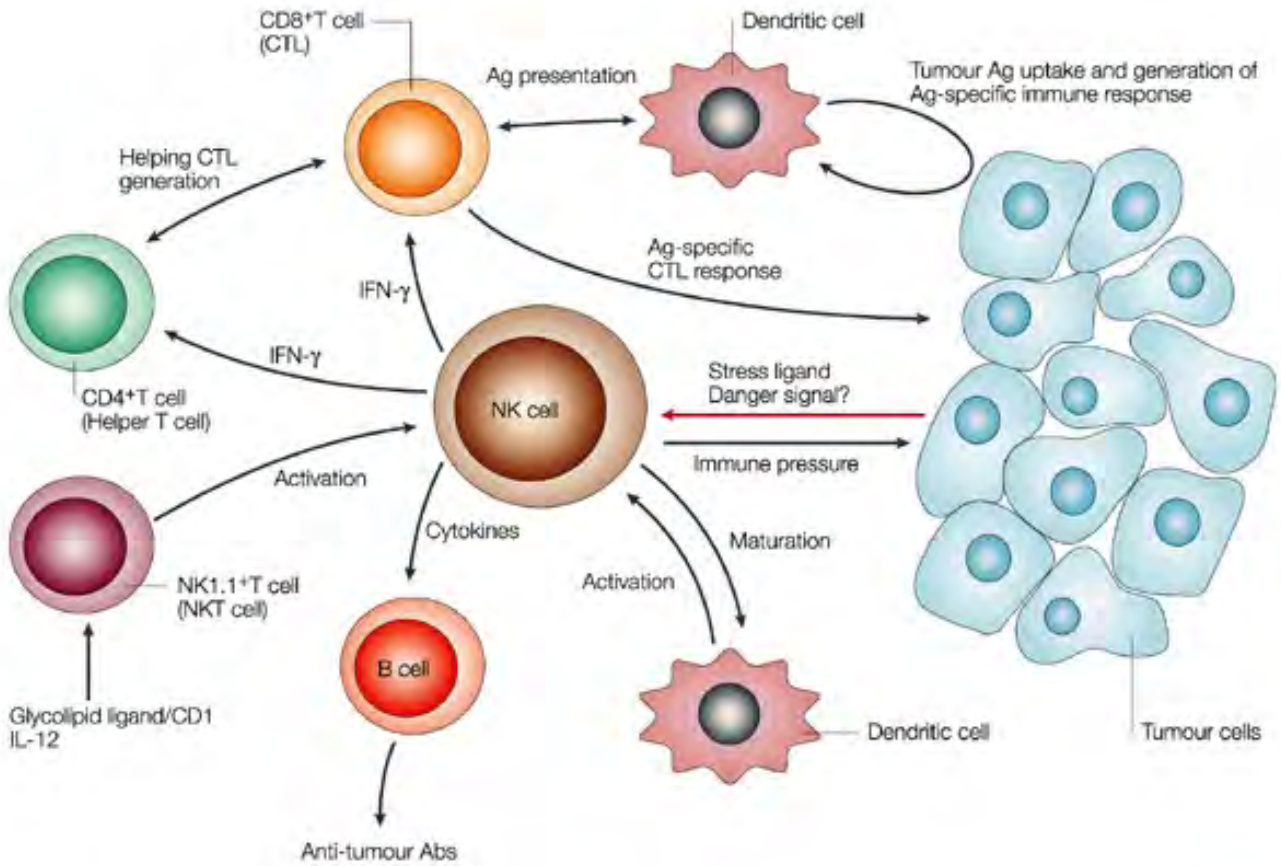
endpoint primario : recidiva tumorale

Biki et al. Anesthesiology 2008

ACT vs AGT



Biki et al. Anesthesiology 2008



Nature Reviews | Cancer

la chirurgia…

- rilascia le cellule tumorali nel circolo
- deprime l’immunità cellulare
- diminuisce i fattori anti-tumorali
- aumenta i fattori pro-angiogenici

l’anestesia generale …

- deprime l’immunità cellulare
- gli oppiacei inibiscono l’immunità cellulare e umorale
- la morfina è pro-angiogenica

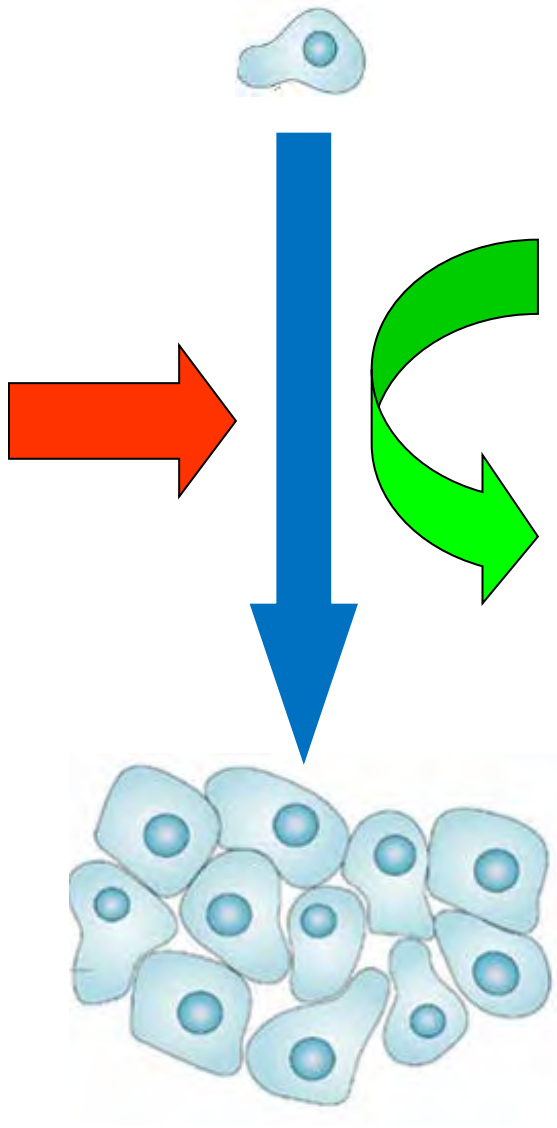
Micrometastasi o malattia residua minima

Anestesia

loco-regionale

Chirurgia

mini invasiva



Immunosuppressione

- stress chirurgico
- anestesia generale
- trasfusione
- dolore postoperatorio

Recidiva tumorale

Stress chirurgico

Intraoperative thoracic epidural anaesthesia attenuates stress-induced immunosuppression in patients undergoing major abdominal surgery†

O. Ahlers[1]*, I. Nachtigall[1], J. Lenze[1], A. Goldmann[1], E. Schulte[1], C. Höhne[2], G. Fritz[3] and D. Keh[1]

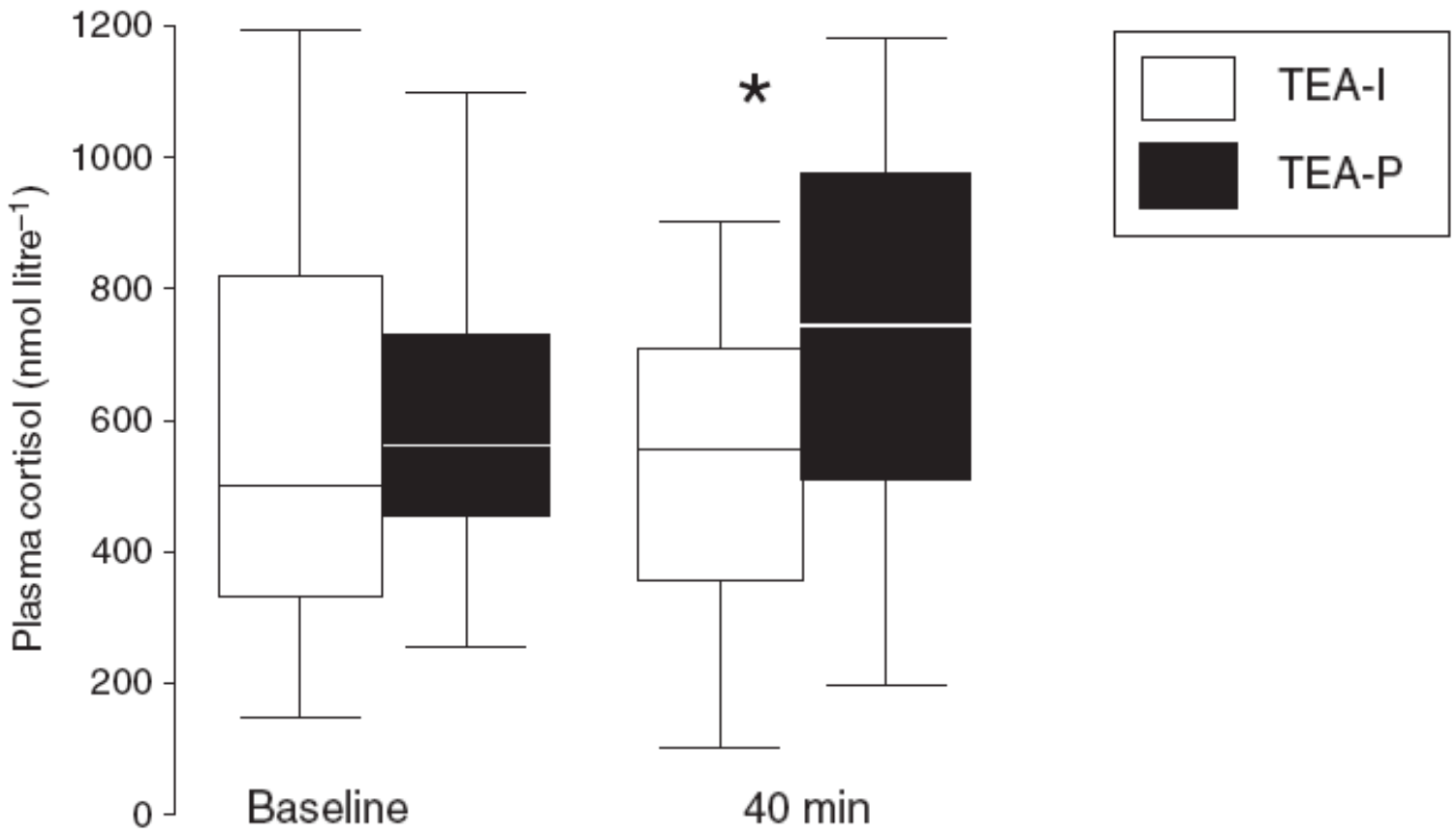
British Journal of Anaesthesia **101 (6):** 781–7 (2008)

54 pazienti, randomizzati in due gruppi:

- ACT **con** utilizzo della peridurale perioperatoria

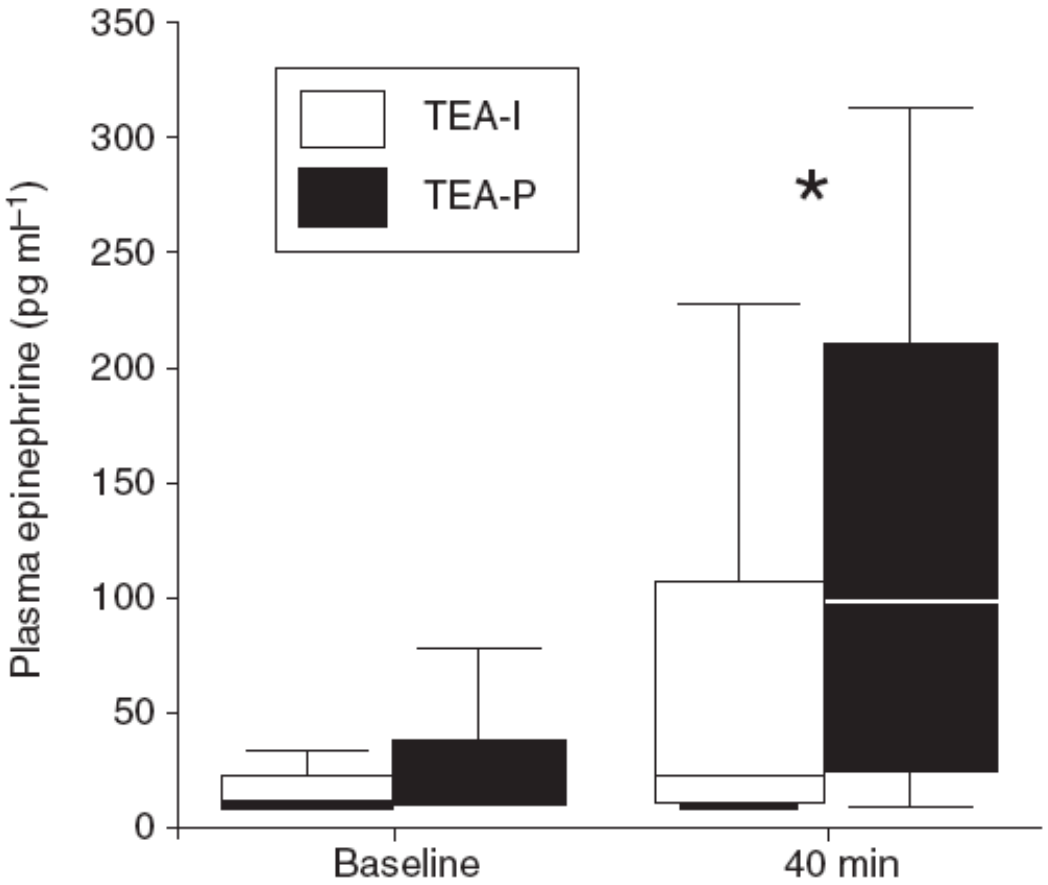
- AGT **senza** utilizzo della peridurale perioperatoria

Stress chirurgico



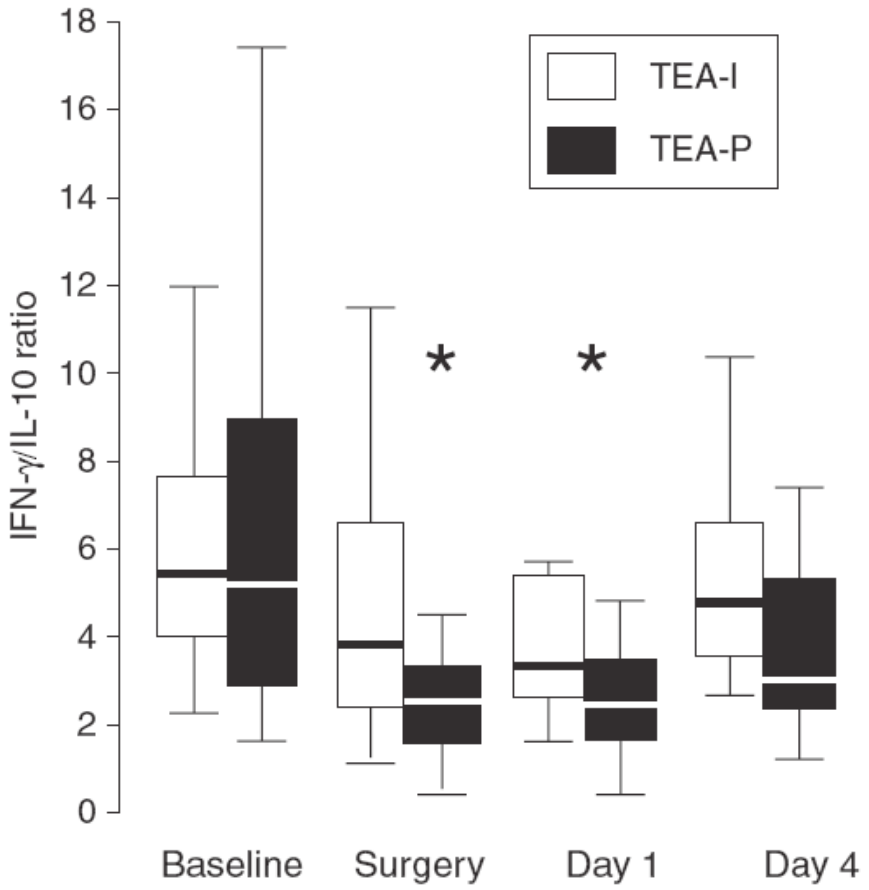
Ahlers et al. BJA 2008

Stress chirurgico



Ahlers et al. BJA 2008

Immunosuppressione

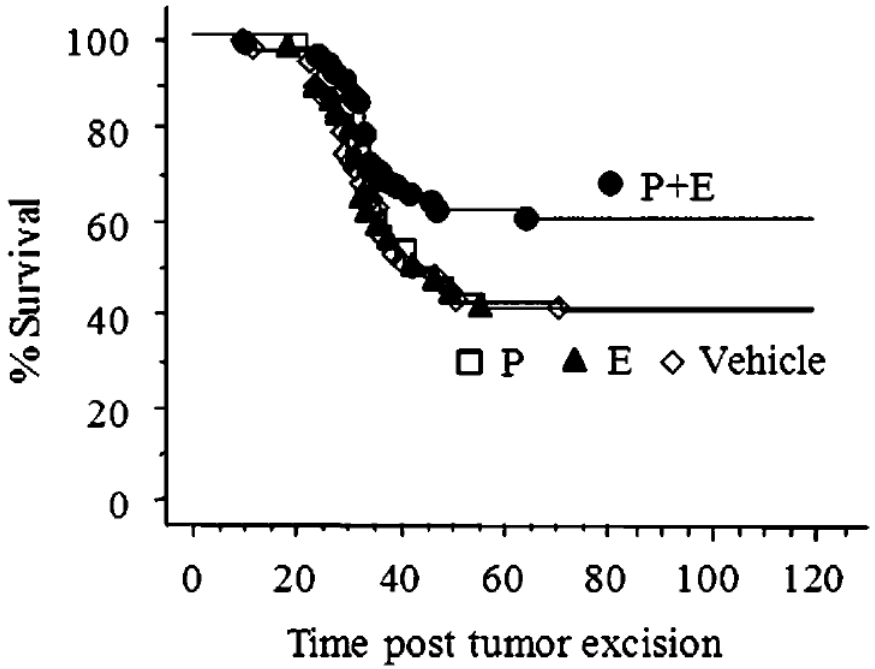


Ahlers et al. BJA 2008

Improving Survival Rates in Two Models of Spontaneous Postoperative Metastasis in Mice by Combined Administration of a β-Adrenergic Antagonist and a Cyclooxygenase-2 Inhibitor

Ariella Glasner,* Roi Avraham,[†,‡] Ella Rosenne,* Marganit Benish,* Oded Zmora,[§,¶] Shaily Shemer,* Hadas Meiboom,* and Shamgar Ben-Eliyahu*

- Somministrazione unica di **Propanolol** (Beta-bloccante) e/o **Etodolac** (COX-2 inibitore) prima della tumorectomia e valutazione della sopravvivenza e del tasso di recidiva



The Journal of Immunology, 2010, 184: 2449–2457.

REVIEW

Can anaesthetic technique effect postoperative outcome?

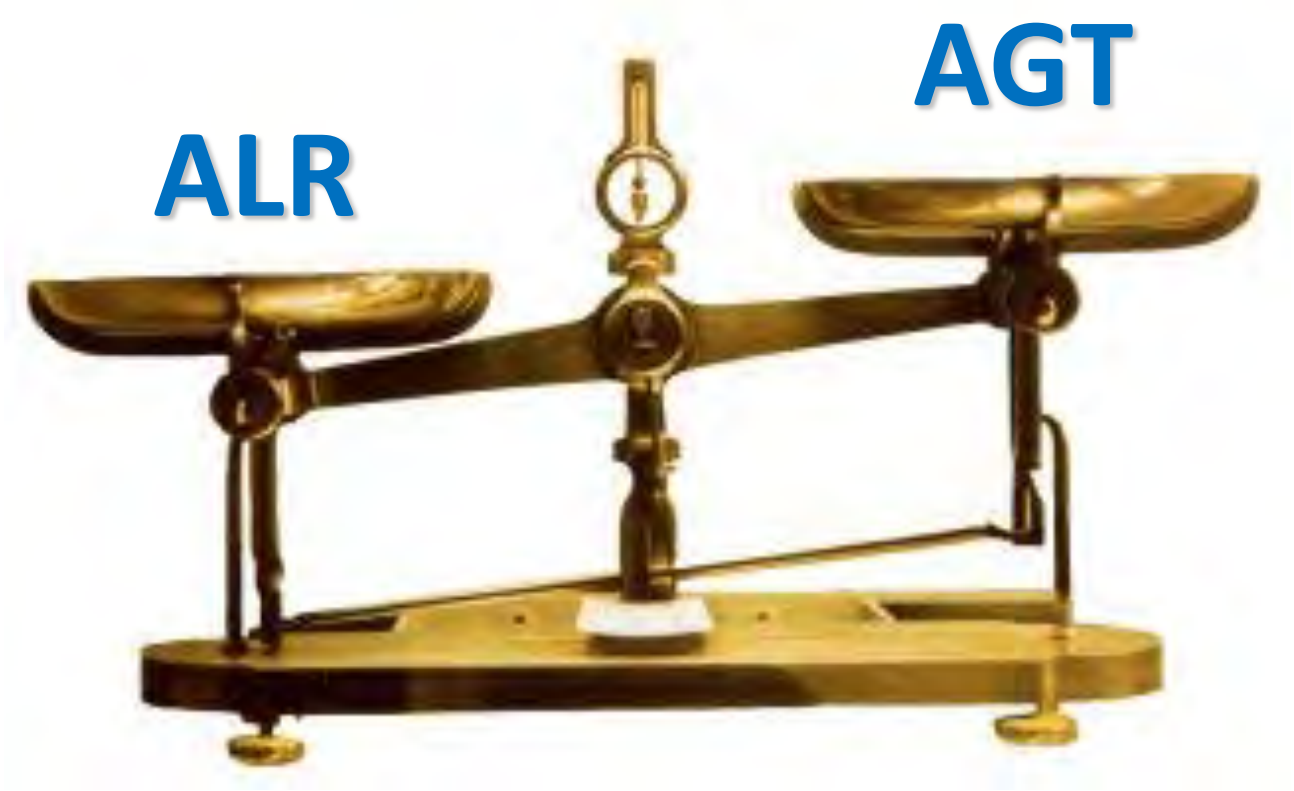
Trevor Kavanagh[a] *and Donal J. Buggy*[a,b]

Table 2. Retrospective analyses of anaesthesia/analgesia techniques and cancer recurrence rates

Type cancer	Authors	Journal, year	Anaesthesia/analgesia technique	Reduced cancer recurrence
Colorectal	Gupta *et al.* [19]	BJA, 2011	Epidural	Rectal CA – Yes Colon CA – No
Breast	Forget *et al.* [29]	Anesth Analg, 2010	Intraoperative ketorolac	Yes
Breast	Exadaktylos *et al.* [31]	Anesthesiology, 2006	Paravertebral analgesia	Yes
Prostate	Biki *et al.* [32]	Anesthesiology, 2008	Epidural	Yes
Colorectal	Gottschalk *et al.* [33]	Anesthesiology, 2010	Epidural	No
Prostate	Tsui *et al.* [34]	Can J Anesth, 2010	Epidural	No
Mixed intra-abdominal cancers	Myles *et al.* [35▪]	BMJ, 2011[a]	Epidural	No

[a]Follow-up analysis of previous randomized controlled (MASTER) trial.

Impatto sull'*outcome* ?



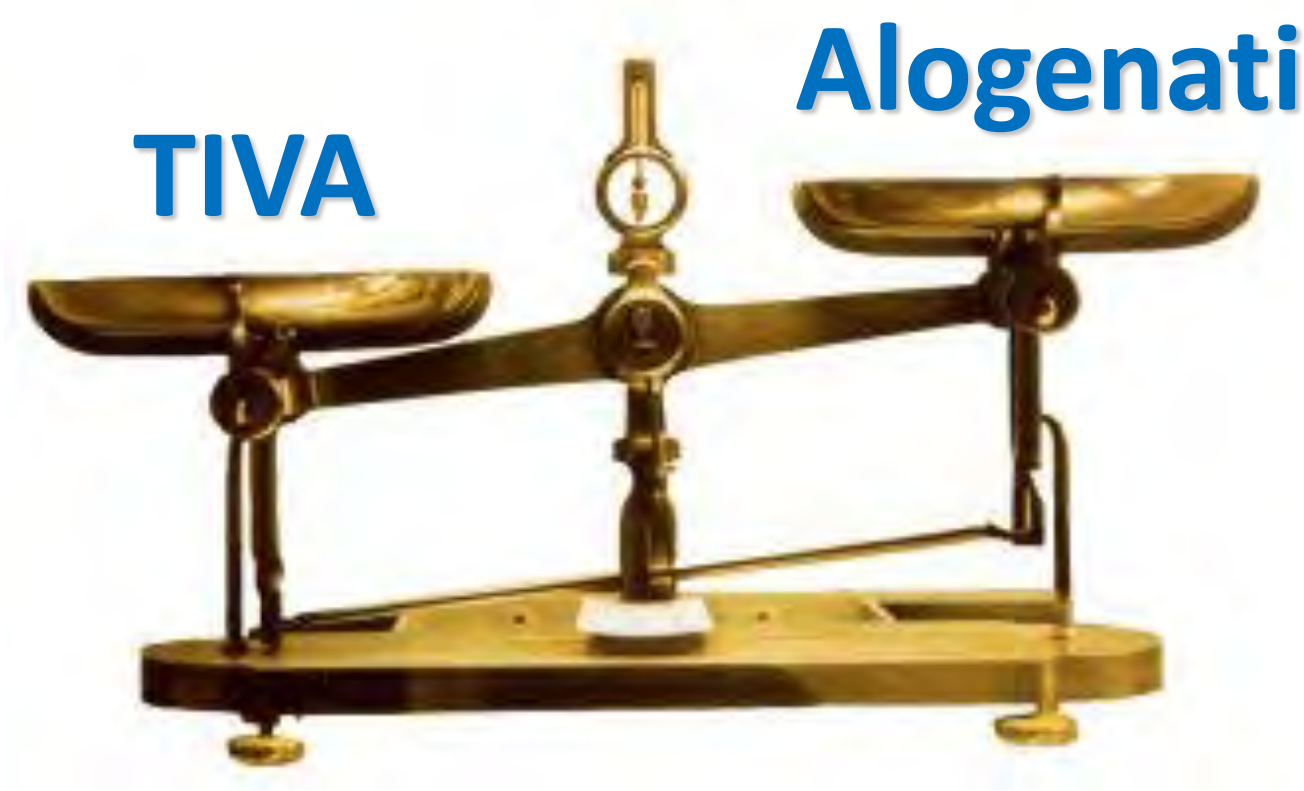
Studi prospettivi

NIH U.S. National Library of Medicine

ClinicalTrials.gov

Recruiting	Regional Anesthesia for Breast Surgery	• Breast Cancer	• Procedure: PECSII and paravertebral blocks	• AUSL IRCCS Reggio Emilia Reggio Emilia, Italy
Not yet recruiting	The Difference of Two Year Recurrence Rate According to Anesthetic Method During Transurethral Resection of Bladder Mass in Patients With Non-muscle Invasive Bladder Cancer: Prospective, Randomized, Clinical Phase II Study	• Bladder Cancer	• Procedure: Anesthesia before transurethral resection of the bladder tumor • Drug: Anesthesia	• Seoul National University Hospital Seoul, Korea, Republic of
Recruiting	Evaluation of Post-operative Biochemical Recurrence in Patients Submitted to Radical Prostatectomy Under General Opioid-free Anesthesia Compared to Conventional General Anesthesia	• Prostate Cancer	• Drug: opioid-free group • Drug: Opioid Group • Procedure: transversus abdominal plane block with ropivacaine • Procedure: transversus abdominal plane block with placebo	• Instituto do Cancer do Estado de Sao Paulo - Icesp Sao Paulo, SP, Brazil
Recruiting	The Effect of Combined General/Regional Anesthesia on Cancer Recurrence in Patients Having Lung Cancer Resections	• Non-small Cell Lung Cancer	• Procedure: General anesthesia with opioid analgesia • Procedure: Combined general/epidural anesthesia	• Shanghai Chest Hospital Shanghai, China
Unknown †	Anesthesia and Cancer Recurrence im Malignant Melanoma	• Malignant Melanoma	• Procedure: Spinal anesthesia with Bupivacaine hyperbar 0.5 % • Procedure: General anesthesia with Sufentanil, Propofol and Rocuronium and Sevoflurane	• Fachklinik Hornheide, Department of Anesthesiology, Intensive Care and Pain Therapy Münster, Germany

Impatto sull'*outcome* ?



Effetti deleteri degli alogenati

Soppressione dell'attività dell'**immunità cellulare** (Natural Killer), prima linea di difesa contro l'invasione delle cellule tumorali e la cui attività durante il periodo perioperatorio è inversamente proporzionale allo sviluppo di metastasi.

Stollings LM et al. Anesthesiology 2016
Tai LH et al. Cancer Res 2013
Buckley A. et al. Br J Anaesth 2014

Effetti deleteri degli alogenati

Aumento dell’espressione di fattori (fattori inducibili dall'ipossia e fattori di crescita endoteliale vascolare) che favoriscono la proliferazione del tumore e l'angiogenesi.

Shi QY et al. British Journal of Anaesthesia 2015

RESEARCH ARTICLE Open Access

The effect of propofol and sevoflurane on cancer cell, natural killer cell, and cytotoxic T lymphocyte function in patients undergoing breast cancer surgery: an in vitro analysis

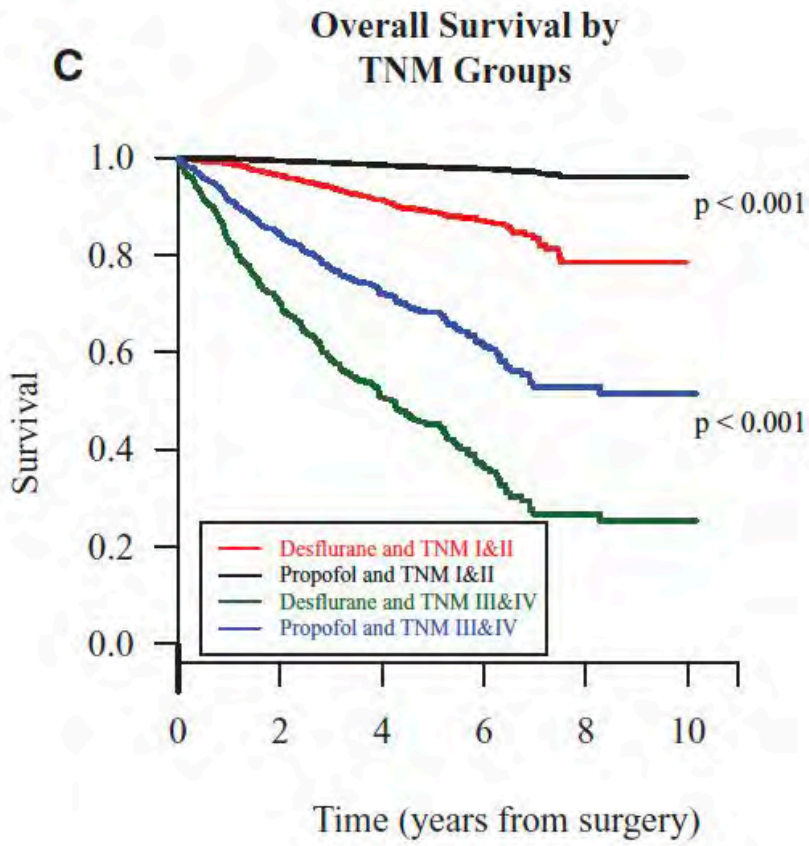
Jeong-Ae Lim[1], Chung-Sik Oh[1], Tae-Gyoon Yoon[1], Ji Yeon Lee[2], Seung-Hyun Lee[2], Young-Bum Yoo[3], Jung-Hyun Yang[3] and Seong-Hyop Kim[1,4*]

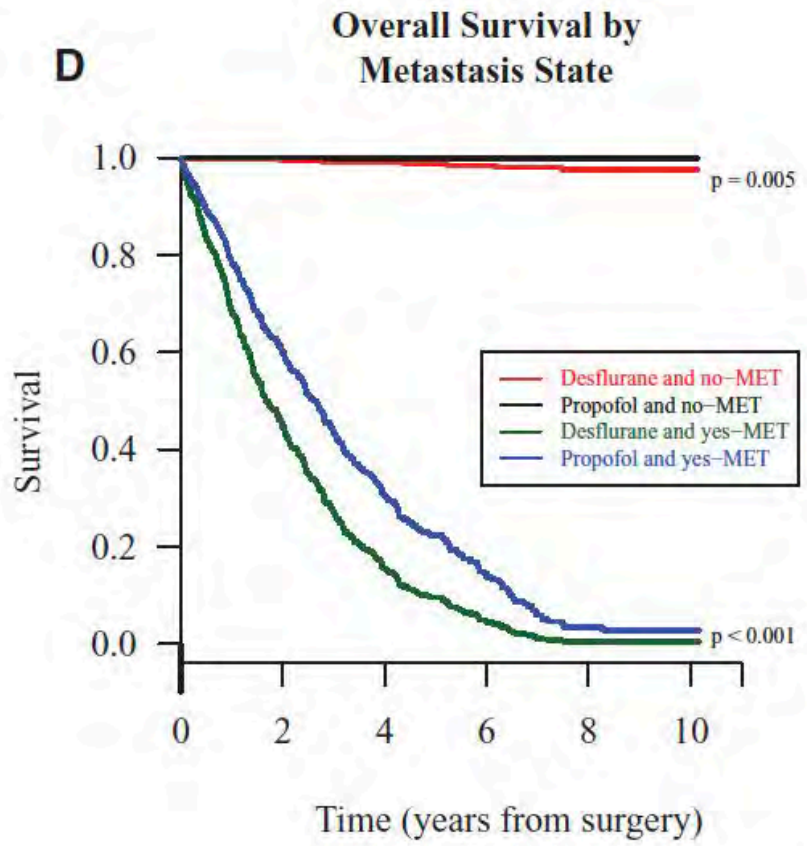
BMC Cancer (2018) 18:159

Conclusione : Nessuna differenza significativa tra Propofol e Sevoflurane, in termini di numerazione, apoptosi e citotossicità dei NK e Linfociti T cytotossici (CD8)

Propofol-based Total Intravenous Anesthesia Is Associated with Better Survival Than Desflurane Anesthesia in Colon Cancer Surgery

Zhi-Fu Wu, M.D., Meei-Shyuan Lee, D.P.H., Chih-Shung Wong, M.D., Ph.D., Chueng-He Lu, M.D., Yuan-Shiou Huang, M.D., Kuen-Tze Lin, M.D., Yu-Sheng Lou, M.S., Chin Lin, Ph.D., Yue-Cune Chang, Ph.D., Hou-Chuan Lai, M.D.





Anesthesiology 2018; 129:932-41

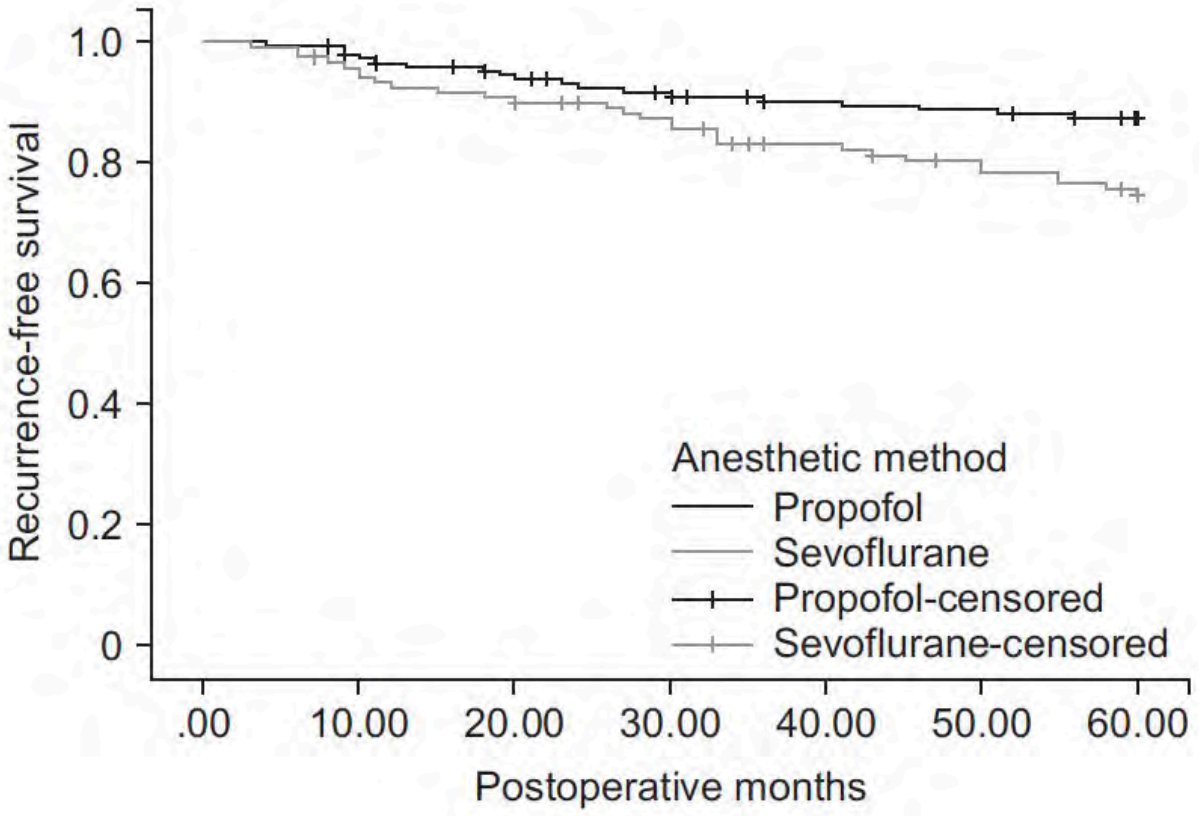
KJA
Korean Journal of Anesthesiology

Clinical Research Article
pISSN 2005-6419 · eISSN 2005-7563

Effects of propofol-based total intravenous anesthesia on recurrence and overall survival in patients after modified radical mastectomy: a retrospective study

Ji Heui Lee[1], Seok Hee Kang[1], Yunkwang Kim[1], Hyun Ah Kim[2], and Bong Seog Kim[3]

VOL. 69, NO. 2, APRIL 2016



Results: A total of 363 MRMs were carried out during the period of the trial; 325 cases were suitable for analysis (173 cases of propofol group, and 152 cases of sevoflurane group). There were insignificant differences between the groups in age, weight, height, histopathologic results, surgical time, or postoperative treatment (chemotherapy, hormonal therapy, and radiotherapy). The use of opioids during the perioperative period was greater in propofol group than in sevoflurane group. Overall survival was no difference between the two groups. Propofol group showed a lower rate of cancer recurrence (P = 0.037), with an estimated hazard ratio of 0.550 (95% CI 0.311–0.973).

Conclusions: This retrospective study provides the possibility that propofol-based TIVA for breast cancer surgery can reduce the risk of recurrence during the initial 5 years after MRM.

ANESTHESIOLOGY

Total Intravenous Anesthesia *versus* Inhalation Anesthesia for Breast Cancer Surgery

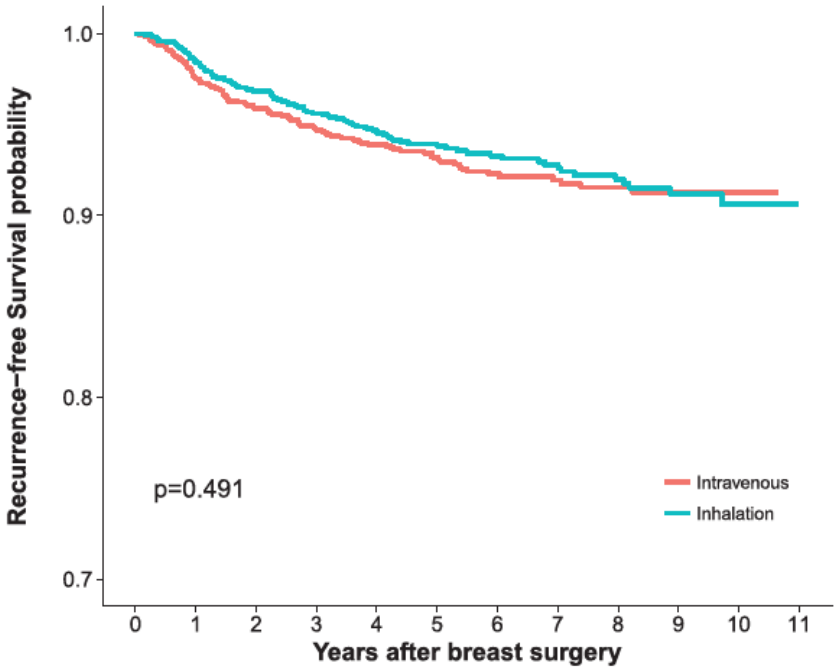
A Retrospective Cohort Study

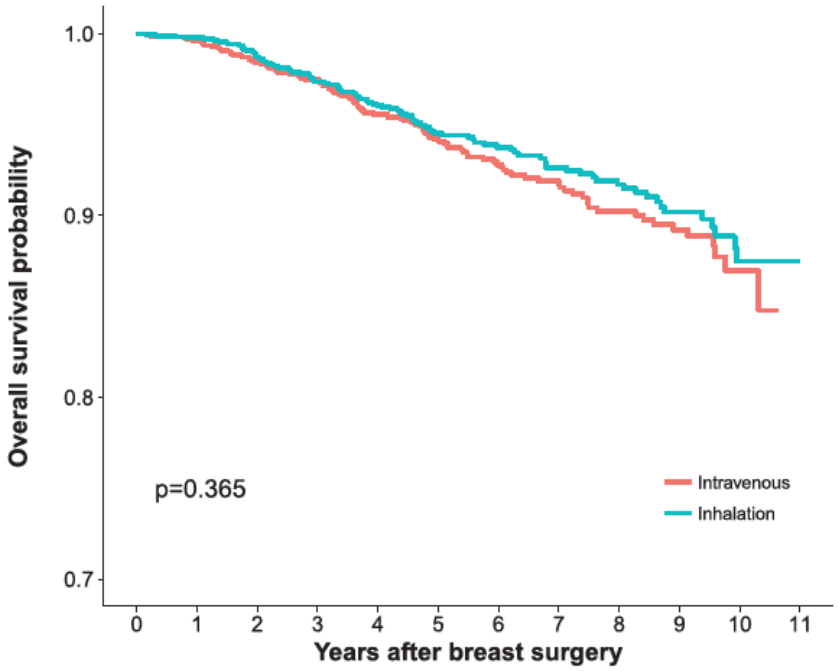
Seokha Yoo, M.D., Han-Byoel Lee, M.D., Wonshik Han, M.D., Ph.D., Dong-Young Noh, M.D., Ph.D., Sun-Kyung Park, M.D., Won Ho Kim, M.D., Ph.D., Jin-Tae Kim, M.D., Ph.D.

ANESTHESIOLOGY 2019; 130:31–40

Results: Of 7,678 patients who had breast cancer surgery during the study period, data for 5,331 patients were available for analysis (IV group, n = 3,085; inhalation group, n = 2,246). After propensity score matching, 1,766 patients remained in each group. Kaplan–Meier survival curves showed that there was no significant difference in recurrence-free survival or overall survival between the two groups, with 5-yr recurrence-free survival rates of 93.2% (95% CI, 91.9 to 94.5) in the IV group and 93.8% (95% CI, 92.6 to 95.1) in the inhalation group. Inhalation anesthesia had no significant impact on recurrence-free survival (hazard ratio, 0.96; 95% CI, 0.69 to 1.32; $P = 0.782$) or overall survival (hazard ratio, 0.96; 95% CI, 0.69 to 1.33, $P = 0.805$) when compared with total IV anesthesia.

Conclusions: The authors found no association between type of anesthesia used and the long-term prognosis of breast cancer. The results of this retrospective cohort study do not suggest specific selection of IV or inhalation anesthesia for breast cancer surgery.





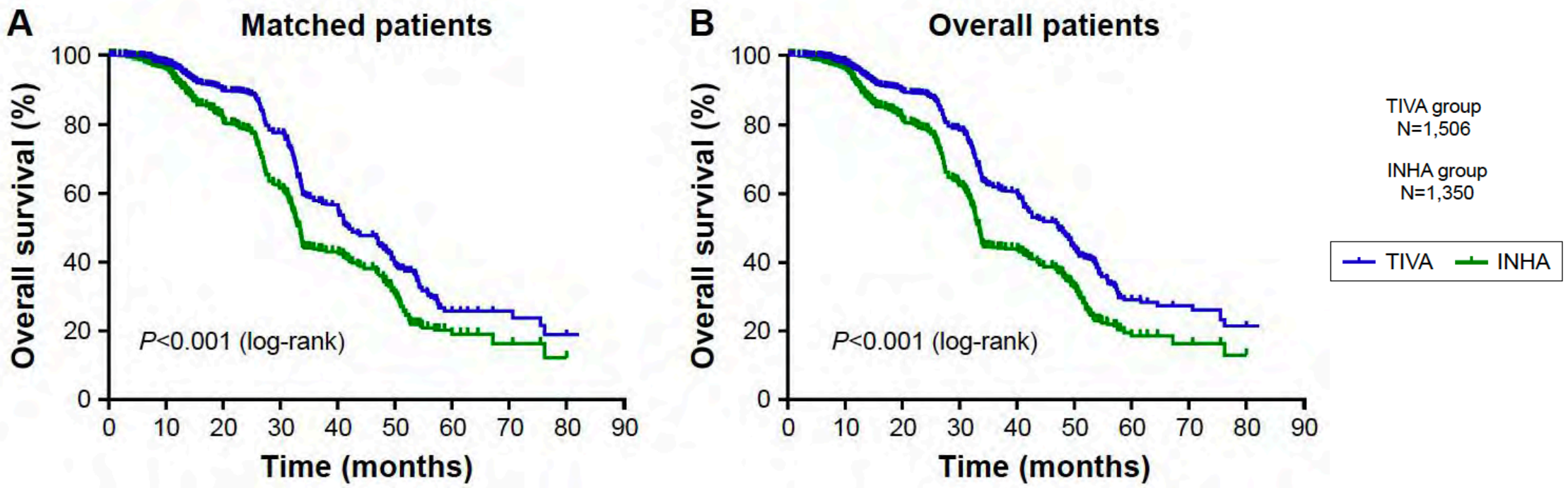
Open Access Full Text Article

ORIGINAL RESEARCH

Effects of propofol-based total intravenous anesthesia on gastric cancer: a retrospective study

Xiaoyu Zheng[1]

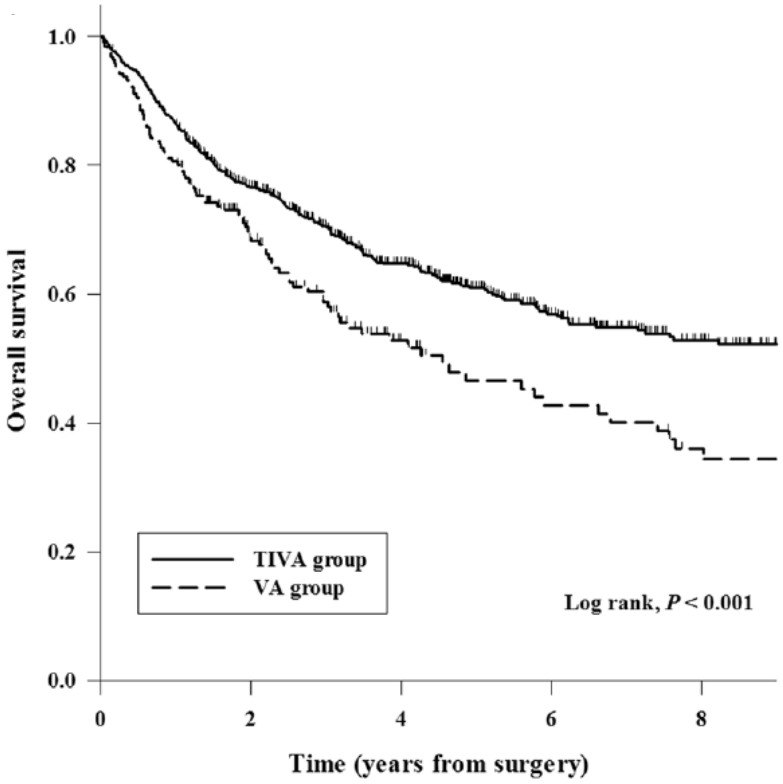
OncoTargets and Therapy 2018:11 1141–1148

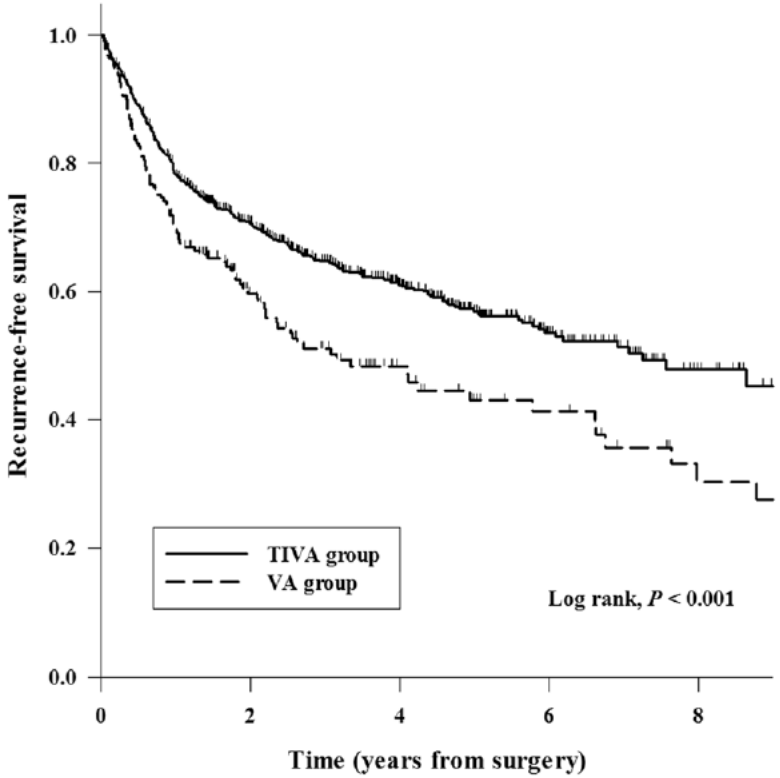


www.nature.com/scientificreports/

Impact of anesthetic agents on overall and recurrence-free survival in patients undergoing esophageal cancer surgery: A retrospective observational study

In-Jung Jun[1], Jun-Young Jo[1], Jong-Il Kim[1], Ji-Hyun Chin[1], Wook-Jong Kim[1], Hyeong Ryul Kim[2], Eun-Ho Lee[1] & In-Cheol Choi[1]





Can J Anesth/J Can Anesth (2019) 66:546–561
https://doi.org/10.1007/s12630-019-01330-x

REVIEW ARTICLE/BRIEF REVIEW

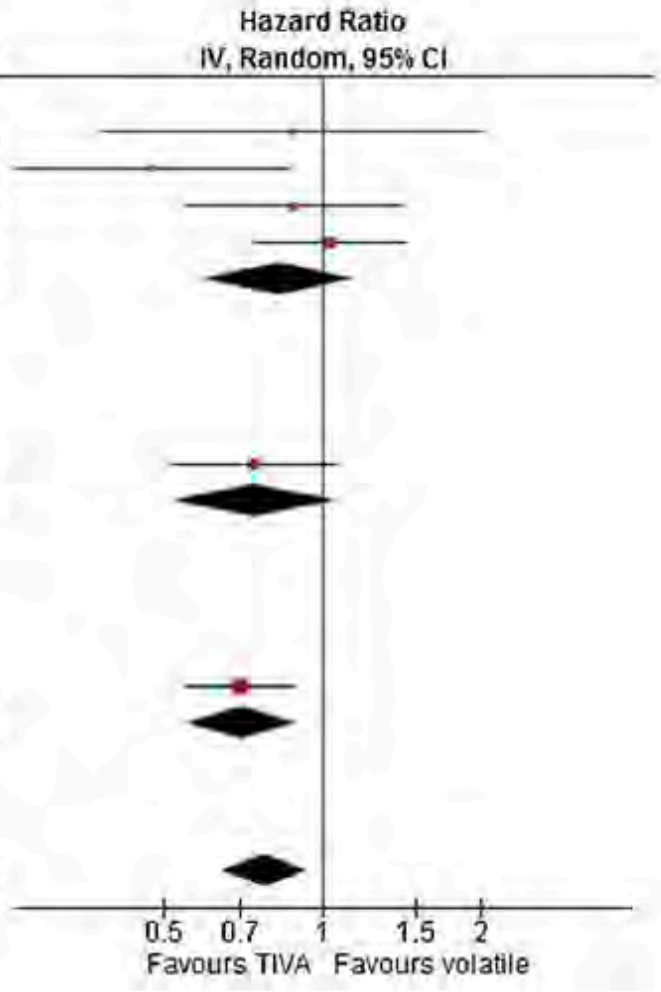
Anesthetic technique and cancer outcomes: a meta-analysis of total intravenous *versus* volatile anesthesia

Technique d'anesthésie et pronostics de cancer : une méta-analyse analyse comparant l'anesthésie intraveineuse totale et l'anesthésie par inhalation

Andrea Yap, FANZCA · Maria A. Lopez-Olivo, PhD · Julia Dubowitz, MBBS · Jonathan Hiller, FANZCA · Bernhard Riedel, PhD · the Global Onco-Anesthesia Research Collaboration Group

Sopravvivenza senza recidive

Study or Subgroup	log[Hazard Ratio]	SE	TIVA Total	Volatile Total	Weight	Hazard Ratio IV, Random, 95% CI
Breast						
Kim 2017 (14)	-0.13	0.42	56	2589	4.7%	0.88 [0.38, 2.02]
Lee 2016 (15)	-0.74	0.30	173	152	8.7%	0.48 [0.26, 0.86]
Yan 2018 (19)	-0.12	0.24	40	40	12.9%	0.89 [0.56, 1.42]
Yoo 2018 (20)	0.04	0.17	1766	1766	21.5%	1.04 [0.75, 1.45]
Subtotal (95% CI)			**2035**	**4547**	**47.9%**	**0.83 [0.59, 1.15]**
Heterogeneity: Tau² = 0.05; Chi² = 5.08, df = 3 (P = 0.17); I² = 41%						
Test for overall effect: Z = 1.11 (P = 0.27)						
NSCLC						
Oh 2018 (16)	-0.29	0.18	181	181	19.3%	0.75 [0.52, 1.07]
Subtotal (95% CI)			**181**	**181**	**19.3%**	**0.75 [0.52, 1.07]**
Heterogeneity: Not applicable						
Test for overall effect: Z = 1.59 (P = 0.11)						
Esophageal						
Jun 2017 (13)	-0.35	0.12	731	191	32.7%	0.70 [0.56, 0.89]
Subtotal (95% CI)			**731**	**191**	**32.7%**	**0.70 [0.56, 0.89]**
Heterogeneity: Not applicable						
Test for overall effect: Z = 2.94 (P < 0.01)						
Total (95% CI)			**2947**	**4919**	**100.0%**	**0.78 [0.65, 0.94]**
Heterogeneity: Tau² = 0.01; Chi² = 6.70, df = 5 (P = 0.24); I² = 25%						
Test for overall effect: Z = 2.60 (P < 0.01)						
Test for subgroup differences: Chi² = 0.61, df = 2 (P = 0.74), I² = 0%						



Sopravvivenza globale

Study or Subgroup	log[Hazard Ratio]	SE	TIVA Total	Volatile Total	Weight	Hazard Ratio IV, Random, 95% CI
Breast						
Enlund 2014 - breast (12)	0.29	0.19	620	1217	8.6%	1.33 [0.91, 1.94]
Yan 2018 (19)	0	0.23	40	40	7.6%	1.00 [0.64, 1.56]
Yoo 2018 (20)	0.04	0.17	1766	1766	9.4%	1.04 [0.75, 1.45]
Subtotal (95% CI)			**2426**	**3023**	**25.6%**	**1.12 [0.90, 1.39]**
Heterogeneity: Tau² = 0.00; Chi² = 1.23, df = 2 (P = 0.54); I² = 0%						
Test for overall effect: Z = 1.00 (P = 0.32)						
Colon						
Enlund 2014 - colon (12)	-0.06	0.14	179	516	10.2%	0.94 [0.71, 1.25]
Wu 2018 (18)	-1.02	0.14	579	579	10.4%	0.36 [0.28, 0.47]
Subtotal (95% CI)			**758**	**1095**	**20.6%**	**0.58 [0.23, 1.49]**
Heterogeneity: Tau² = 0.44; Chi² = 23.38, df = 1 (P < 0.01); I² = 96%						
Test for overall effect: Z = 1.13 (P = 0.26)						
Gastric						
Zheng 2019 (21)	-0.49	0.06	1506	1350	12.5%	0.61 [0.55, 0.69]
Subtotal (95% CI)			**1506**	**1350**	**12.5%**	**0.61 [0.55, 0.69]**
Heterogeneity: Not applicable						
Test for overall effect: Z = 8.02 (P < 0.01)						
Mixed						
Wigmore 2016 (17)	-0.38	0.07	3714	3316	12.4%	0.68 [0.60, 0.78]
Subtotal (95% CI)			**3714**	**3316**	**12.4%**	**0.68 [0.60, 0.78]**
Heterogeneity: Not applicable						
Test for overall effect: Z = 5.78 (P < 0.01)						
NSCLC						
Oh 2018 (16)	-0.14	0.13	181	181	10.7%	0.87 [0.68, 1.11]
Subtotal (95% CI)			**181**	**181**	**10.7%**	**0.87 [0.68, 1.11]**
Heterogeneity: Not applicable						
Test for overall effect: Z = 1.13 (P = 0.26)						
Esophageal						
Jun 2017 (13)	-0.46	0.12	731	191	10.8%	0.63 [0.50, 0.81]
Subtotal (95% CI)			**731**	**191**	**10.8%**	**0.63 [0.50, 0.81]**
Heterogeneity: Not applicable						
Test for overall effect: Z = 3.70 (P < 0.01)						
Rectal						
Enlund 2014 - rectal (12)	-0.19	0.23	104	202	7.4%	0.83 [0.52, 1.31]
Subtotal (95% CI)			**104**	**202**	**7.4%**	**0.83 [0.52, 1.31]**
Heterogeneity: Not applicable						
Test for overall effect: Z = 0.79 (P = 0.43)						
Total (95% CI)			**9420**	**9358**	**100.0%**	**0.76 [0.63, 0.92]**
Heterogeneity: Tau² = 0.07; Chi² = 55.53, df = 9 (P < 0.01); I² = 84%						
Test for overall effect: Z = 2.82 (P < 0.01)						
Test for subgroup differences: Chi² = 26.59, df = 6 (P < 0.01), I² = 77.4%						

Can J Anesth/J Can Anesth (2019) 66:491–494
https://doi.org/10.1007/s12630-019-01331-w

EDITORIALS

Can anesthesiologists affect cancer outcomes?

Jacob W. Nadler, MD, PhD · Timothy D. Quinn, MD · Elliott Bennett-Guerrero, MD

«Forse impareremo anche, nel tempo, che la scelta del farmaco anestetico influenza la prognosi del cancro.
Una simile scoperta avrebbe un profondo impatto sulla salute pubblica e potrebbe aprire la porta a una nuova sotto specializzazione anestetica: l'onco-anestesia»

Infezioni postoperatorie

The New England
Journal of Medicine

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Volume 334 MAY 9, 1996 Number 19

PERIOPERATIVE NORMOTHERMIA TO REDUCE THE INCIDENCE OF SURGICAL-WOUND INFECTION AND SHORTEN HOSPITALIZATION

ANDREA KURZ, M.D., DANIEL I. SESSLER, M.D., AND RAINER LENHARDT, M.D.,
FOR THE STUDY OF WOUND INFECTION AND TEMPERATURE GROUP*

Una ipotermia moderata (34.7 +/- 0.6 °C) **triplica** il rischio d'infezione, anche se quest'ultima è talvolta clinicamente evidente solo dopo 1 o 4 settimane dopo l'intervento.

THE LANCET

ARTICLES | VOLUME 358, ISSUE 9285, P876-880, SEPTEMBER 15, 2001

Effects of preoperative warming on the incidence of wound infection after clean surgery: a randomised controlled trial

Andrew C Melling, BSc • Baqar Ali, FRCS • Eileen M Scott, PhD • Prof David J Leaper, FRCS

Published: September 15, 2001 • DOI: https://doi.org/10.1016/S0140-6736(01)06071-8

REVIEW

Can anaesthetic technique effect postoperative outcome?

Trevor Kavanagh[a] *and Donal J. Buggy*[a,b]

Table 4. Summary of evidence base for specific perioperative interventions in postoperative outcomes

Anaesthetic technique /intervention	Postoperative outcome advantage	Level of evidence[a]	Proposed recommendation from currently available data
Maintenance of intraoperative normothermia	Reduced postoperative surgical site infection rates	Level A [6,7]	Class I
Regional anaesthesia		Level B [9,10]	Class IIb
Supplemental perioperative oxygen (FiO_2 80%)		Level B [11,12]	Class I
Avoiding perioperative hyperglycaemia in both diabetic and nondiabetic patients		Level B [42,43▪,47▪,49]	Class IIa
Administering insulin via a continuous intravenous infusion thereby avoiding large swings in blood glucose values		Level A [44,46]	Class IIa
Avoidance of allogeneic blood transfusion	Reduced postoperative infections	Level A [51,54]	Class IIa

Curr Opin Anesthesiol 2012, 25:185–198

Dolori cronici post-operatori

Surgery	Moderate to Severe Pain beyond 3 Months
Amputation[94]	30 to 81%
Cesarean section[178]	15.4%
Cholecystectomy[17]	3 to 56%
Hernia repair[8]	5 to 35%
Hysterectomy[179]	5 to 32%
Mastectomy[8]	20 to 50%
Hip replacement[180]	7 to 23%
Thoracotomy[17]	61 to 70%

Richebé P, Anesthesiology 2018

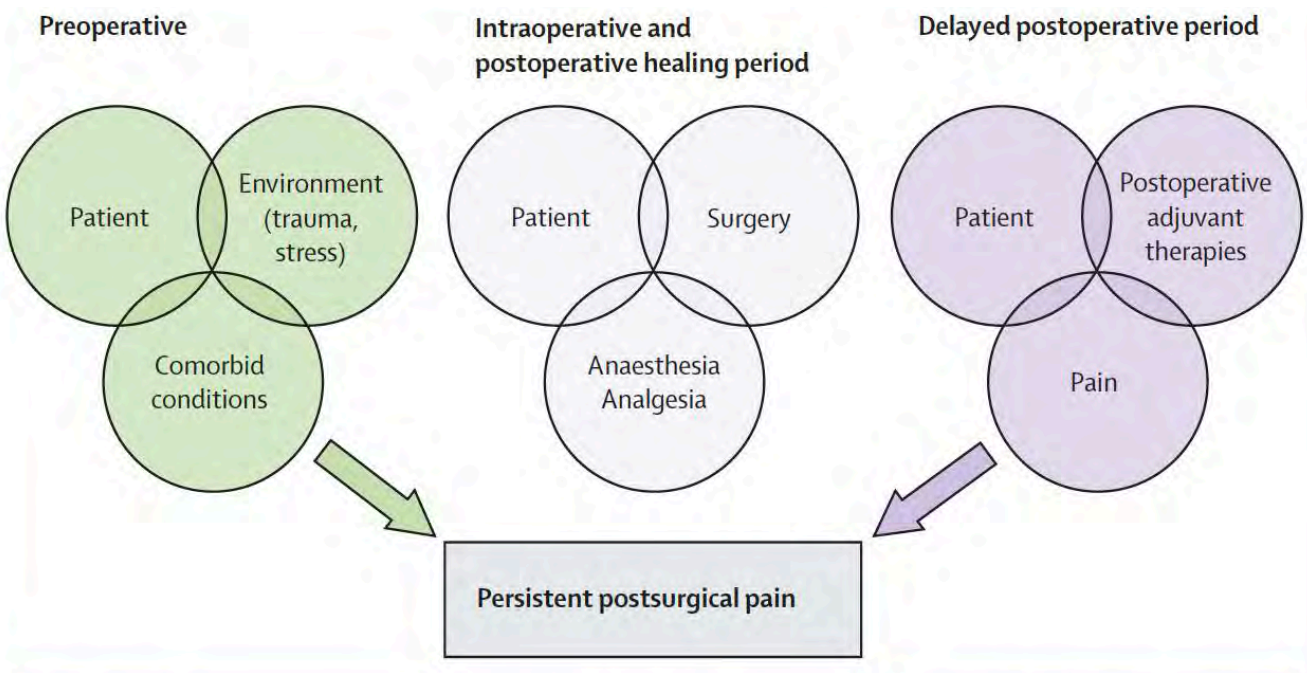
PAIN: Clinical Updates
OPEN
PAIN REPORTS

Risk stratification for the development of chronic postsurgical pain

Stephan A. Schug[a,*], Julie Bruce[b]

I **fattori dei rischi identificati** per dolori cronici postoperatori:

- Genetici
- Demografici
- Psicosociali
- Dolori
- Fattori clinici (comorbidità)
- Fattori chirurgici



	Subgroup with worse CPSP	Consistency of evidence	Timing of data collection		
			Preoperative	Intraoperative	Postoperative
Demographic					
Age	Younger adults	Consistent	+	..	..
Gender	Female	Mixed	+	..	..
Marital status or living arrangements	Single or living alone	Mixed	+	..	..
Education level	Less educated	Consistent	..	..	..
Employment status	Unemployed	Mixed	..	..	..
Compensation status	Seeking compensation	Consistent	..	..	..
Lifestyle	Smokers	Consistent	..	..	..
Gene mutations	Various single gene candidates (eg, *COMT*, *OPRM1*, *GCH1*)	Few data	+/–	..	..

Glare P, Lancet 2019; 393: 1537–46

	Subgroup with worse CPSP	Consistency of evidence	Timing of data collection		
			Preoperative	Intraoperative	Postoperative
Clinical					
Medical comorbidities	More	Consistent	+	..	..
Body-mass index	Higher	Mixed	+	..	..
Prior disability	Greater	Consistent	+	..	..
Surgery related					
Duration of surgery	Longer	Consistent	..	+	..
Surgical technique	Nerve injury	Mixed	..	+	..
Analgesia regimen	Systemic, reactive *vs* spinal, pre-emptive	Mixed	+	+	..
Anaesthesia	General *vs* regional	Mixed	..	+	..
Complications	More	Consistent	..	+	+

Glare P, Lancet 2019; 393: 1537–46

	Subgroup with worse CPSP	Consistency of evidence	Timing of data collection		
			Preoperative	Intraoperative	Postoperative
Pain					
Preoperative	Present	Consistent	..	..	..
Postoperative, intensity	Stronger	Consistent	+	+	+
Postoperative, duration	>5 days	Consistent	+	+	+
Psychological					
Fear or anxiety	Greater	Consistent	+	..	+
Depression	Greater	Consistent	+	..	+
Pain catastrophising	Greater	Consistent	+	..	+
Other psychological issues (eg, vulnerability factors)	Present	Few data	..	..	..

Glare P, Lancet 2019; 393: 1537–46

"My Surgical Success": Effect of a Digital Behavioral Pain Medicine Intervention on Time to Opioid Cessation After Breast Cancer Surgery—A Pilot Randomized Controlled Clinical Trial

Beth D. Darnall, PhD,* Maisa S. Ziadni, PhD,* Parthasarathy Krishnamurthy, PhD,† Pamela Flood, MD,* Lauren C. Heathcote, PhD,* Ian G. Mackey,* Chloe Jean Taub, MA,‡ and Amanda Wheeler, MD§

- Sito web contenente un video educativo di 90 minuti
- Guide personalizzate scaricabili
- File audio di rilassamento

MSS è associato ad una **grande soddisfazione** dei pazienti, una diminuzione quindi un **arresto piu rapido degli oppiacei** nel postoperatorio.

Pain medicine 2019

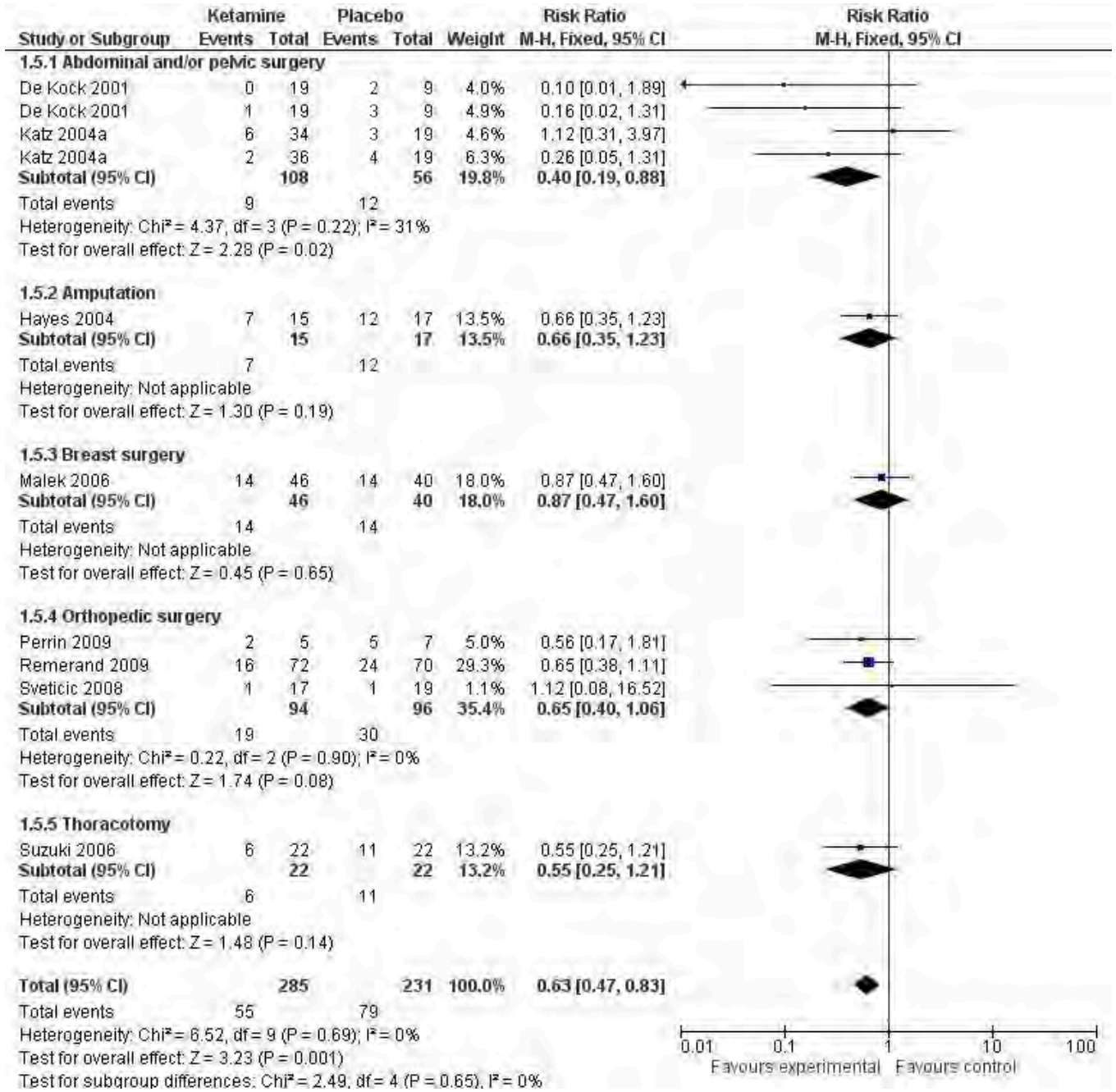
PAIN

Perioperative pregabalin administration does not prevent chronic postoperative pain: systematic review with a meta-analysis of randomized trials

Valeria Martinez;Xavier Pichard;Dominique Fletcher;

- L'obiettivo primario era l'incidenza del dolore cronico postoperatorio a 3 mesi e l'incidenza degli obiettivi secondari a 6 e 12 mesi.
- 18 studi inclusi nella meta-analisi (2485 pazienti)
- **I dati provenienti da studi pubblicati non forniscono prove per la prevenzione del dolore cronico.**

Pain. 158(5):775–783, May 2017



Solo la **Ketamina** nel peri-operatorio (somministrata >24 ore) sembra **ridurre l'incidenza** del dolore cronico a 3 e 6 mesi dopo la chirurgia (14 RCTs).

Cochrane Database Syst Rev. 2013 Jul; 2013(7)

Conclusione

- Come medico perioperatorio, l'anestesista sta già svolgendo un ruolo sempre più importante nel miglioramento dell'assistenza ai pazienti.

EJA

Eur J Anaesthesiol 2019; **36**:387–389

EDITORIAL

The anaesthesiologist

The unsung hero of peri-operative intensive care

Claude Martin, Edoardo De Robertis and Stefan De Hert

During surgery
- Locoregional or general anaesthesia - Unconsciousness - Pain control - Muscle relaxation - Monitoring and stabilisation of vital functions

Recovery
- Control level of consciousness - Pain control - Monitoring and stabilisation of vital functions

Peri-operative medicine
- Diagnosing and stabilising chronic diseases/organ dysfunction - Information and consent to anaesthesia - Seeking advice from organ specialists - Peri-operative intensive care (see right panel)

Perioperative intensive care
- Diagnosing and treating organ failures before, during and possibly after surgery. - Using intensive care drugs, sophisticated monitoring systems - Using organ support techniques

I multipli aspetti dell’anestesia, incluse le **cure intensive peri-operatorie** per la presa a carico dei pazienti piu’ fragili

Conclusione

- In futuro potrebbe svolgere un ruolo chiave aggiuntivo per il futuro a lungo termine del paziente:
- Complicazioni remote
- Recidiva del tumore
- Dolore post-operatorio cronico

Grazie per l’attenzione!

La Tour Medical Group

CLINIQUE DE LA DOULEUR