S.I.C.OB. EVENTI

RICCIONE, SABATO 12 APRILE 2025

CHIRURGIA DELL'OBESITA:
DAL TRATTAMENTO INTEGRATO
AL WELLNESS

Resp. Scientifico
Andrea Lucchi

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Quali novità in anestesia e rianimazione bariatrica?

DOTT.SSA PARMEGGIANI SERENA

UO ANESTESIA-RIAMIMAZIONE
RICCIONE-CATTOLICA

Gli interventi bariatrici laparoscopici possono essere associati ad un **intenso dolore post-operatorio** e quindi alla necessità dell'uso di oppioidi per un trattamento adeguato

Gli **oppioidi** hanno effetti come **depressione respiratoria, stitichezza, nausea, vomito** particolarmente indesiderati nei pazienti affetti da obesità sottoposti a chirurgia gastrointestinale e temuti in presenza di **sindrome da apnea ostruttiva nel sonno**

Ormai è consolidato il vantaggio di un approccio **opioid-free (opioid-sparing)** per garantire un recupero post-operatorio migliore e più rapido secondo uno schema di **analgesia multimodale**

Sono attualmente disponibili diverse opzioni che possono ridurre la necessità di oppioidi, tra cui l'uso di analgesici alternativi come lidocaina, ketamina, magnesio, dexmetedomidina e le **tecniche di anestesia loco-regionale: QUALE??**

Table 1 Network meta-analysis results

MME		
	MD (95%CI)	*p* value
Intraperitoneal	−3.51 (−24.24; 18.22)	0.751
Subcostal TAP block	−8.24 (−28.86; 12.35)	0.432
TAP block	−12.96 (−27.65; 1.72)	0.008
Wounds/ports infiltration	−6.51 (−35.06; 22.04)	0.655
Pain 6 h		
Intraperitoneal	−0.69 (−1.29;−0.08)	0.026
Subcostal TAP block	−1.41 (−2.79;−0.02)	0.047
TAP block	−1.61 (−2.16;−1.05)	<0.001
Wounds/ports infiltration	–	–
Pain 12 h		
Intraperitoneal	−0.80 (−1.95; 0.34)	0.170
Subcostal TAP block	−1.32 (−3.55; 0.91)	0.245
TAP block	−1.02 (−1.88;−0.17)	0.019
Wounds/ports infiltration	–	–
Pain 24 h		
	MD (95%CI)	*p* value
Intraperitoneal	−1.00 (−1.76;−0.24)	0.010
Subcostal TAP block	−0.13 (−1.61; 1.35)	0.866
TAP block	−0.66 (−1.35; 0.03)	0.062
Wounds/ports infiltration	0.02 (−1.77; 1.81)	0.982
Time to deambulate		
	MD (95%CI)	*p* value
TAP block	−2.80 (−4.29;−1.32)	<0.001
PONV		
	OR (95%CI)	*p* value
Intraperitoneal	0.41 (0.08; 1.94)	0.260
Subcostal TAP block	1.39 (0.17; 9.79)	0.801
TAP block	0.25 (0.10; 0.63)	0.003
Additional analgesics		
	OR (95%CI)	*p* value
Intraperitoneal	0.68 (0.17;2.86)	0.024
Subcostal TAP block	0.78 (002; 24.38)	0.888
TAP block	0.14 (0.05; 0.39)	<0.001
Wounds/ports infiltration	0.71 (0.08; 6.19)	0.754

TAP, transversus abdominis plane

Anesthesia for Bariatric Surgery: a Systematic Meta-Analysis

	TAP block	Subcostal TAP block	Wounds/ports infiltration	Intraperitoneal	Control
MME	1 (0.758)	2 (0.574)	3 (0.508)	4 (0.419)	5 (0.240)
Pain 6 h	1 (0.869)	2 (0.726)	–	3(0.392)	4(0.012)
Pain 12 h	1 (0.715)	2 (0.665)	–	3 (0.546)	4 (0.072)
Pain 24 h	2 (0.696)	3 (0.376)	4 (0.324)	1 (0.859)	5 (0.244)
Time to ambulate	1 (0.999)	–	–	–	2 (0.001)
PONV	1 (0.879)	4 (0.216)	–	2 (0.660)	3 (0.243)
Additional analgesics	1 (0.916)	3 (0.375)	4 (0.362)	2(0.362)	5 (0.208)

PONV, postoperative nausea and vomiting; *TAP*, transversus abdominis plane; *MME*, milligram morphine equivalent

Table 2 SUCRA rankings

Table 1 Study characteristics. *USG*, ultrasound; *BMI*, Body Mass Index; *TAP*, transversus abdominis plane; *LSG*, laparoscopic sleeve gastrectomy

Study	Country	USG-Guided	BMI*/female sex (%)	Type of surgery	Type and dose of local anesthetic	TAP approach	Postoperative opioid
Alver 2023	Turkey	Yes	49.36 + − 6.66/66	LSG	Bupivacaine 0.5% 1.5 mg/kg	Postoperatively	Tramadol
Hussien 2023	Egypt	Yes	40.68 + − 2.75/50	LSG	Bupivacaine 0.25% 0.2 mL/Kg	Preoperatively	Pethidine
Xue 2022	China	Yes	42.73 ± 6.8/70	LSG	Ropivacaine 0.33% (30 mL)	Preoperatively	NA (PCA)
Abdelhamid 2020	Egypt	Yes	44.5 + − 2.27/43	LSG	Bupivacaine 0.25%	Preoperatively	Pethidine
Emile 2019	Egypt	Yes	49.5 ± 5.3/92	LSG, mini-gastric bypass, single anastomosis sleeve ileal bypass, gastric greater curvature plication	Bupivacaine 0.25% (20 mL)	Postoperatively	Pethidine
Saber 2018	USA	Yes	43.6 ± 7.6/87	LSG	0.25% bupivacaine (40 mL total) or 0.25% bupivacaine + 1/100,000 epinephrine (40 mL total)	Preoperatively	Fentanyl or morphine or dilaudid or oxycodone or toradol
Sherif 2015	Egypt	Yes	38.53 + − 2.19/23	LSG	Bupivacaine 0.5% 20 mL	Postoperatively	Morphine
Ibrahim 2014	Egypt	Yes	47.46 + − 9.5/71	LSG	Bupivacaine 0.25%	Preoperatively	Morphine
Sinha 2013	India	Yes	46.85 ± 6.54/NA	Gastric bypass	Ropivacaine 0.375%	Postoperatively	Tramazac hydrochloride
Wassef 2013	USA	Yes	46.18 + − 6.68/80	LSG	Ropivacaine 0.2%	Postoperatively	Hydromorphone
Albrecht 2013	Canada	Yes	49.08 + 1.63/80	Gastric bypass	0.25% bupivacaine + 1:200,000 epinephrine	Preoperatively	Morphine

inis Plane Block as an Effective

Key Points.

- USG-TAP block has increased its usage worldwide, making it a feasible technique.
- USG-TAP block was shown to decrease opioid consumption within the first 24 h of surgery and also decrease the number of patients requiring more analgesia.
- USG-TAP block was shown to be effective in reducing the pain score within the first 24 h after the laparoscopic bariatric surgery.

Patients randomized to the TAP group were placed in the supine position. The TAP block was then administered using a high-frequency linear ultrasound transducer. After skin preparation and isolation, the transducer was placed 2 cm subxiphoidian and moved along the subcostal edge to identify the rectus abdominis muscle and transversus abdominis. Once these structures were identified, a blunted-tip, 20-gauge, short bevel needle (Pajunk Sonoplex, Germany) was introduced using the in-plane approach 2–3 cm laterally to the transducer under direct ultrasound visualization, and 1–2 ml of saline was injected between the rectus abdominis and transversus abdominis muscles. After confirming the correct placement of the needle and negative aspiration probe, the rest of the anesthetic was injected along the subcostal line in the TAP (20 ml 0.25% bupivacaine), and dissection of the plane was observed. The block was performed bilaterally. A total of 20 ml of 0.25% bupivacaine was injected on each side after aspiration to avoid intravascular placement.

ility and efficacy of erector

Table 4. Comparison of VAS Scores

Variable	ESP group	TAP group	95 % CI	P value
VAS 5 min	2.37 ± 0.67	3.00 ± 1.11	−1.11, −0.16	0.010*
VAS 10 min	2.40 ± 0.77	3.20 ± 1.24	−1.33, −0.27	0.004*
VAS 15 min	2.50 ± 0.73	3.30 ± 1.37	−1.37, −0.23	0.007*
VAS 20 min	2.53 ± 0.73	3.37 ± 1.50	−1.44, −0.22	0.009*
VAS 25 min	2.37 ± 0.56	2.97 ± 1.16	−1.07, −0.13	0.014*
VAS 30 min	2.37 ± 0.56	2.73 ± 0.69	−0.69, −0.04	0.028*
VAS 2 h	2.30 ± 0.47	2.47 ± 0.57	−0.44, 0.10	0.221
VAS 4 h	2.30 ± 0.65	2.57 ± 0.73	−0.62, 0,09	0.140
VAS 8 h	2.27 ± 0.69	2.50 ± 0.63	−0.58, 0.11	0.177
VAS 12 h	2.30 ± 0.79	2.40 ± 0.62	−0.47, 0.27	0.589
VAS 18 h	2.10 ± 0.48	2.47 ± 0.63	−0.66, −0.08	0.014*
VAS 24 h	2.10 ± 0.48	2.43 ± 0.63	−0.62, −0.04	0.025*
Mean	2.32 ± 0.12	2.78 ± 0.34	0.32, 0.59	< 0.001*

Values are presented as mean ± SD. VAS 5–30: visual analog scale score from 5 min after extubation to 30 min after extubation, VAS 2–24 h: visual analog scale score from 2 h after extubation to 24 h after extubation, ESP: erector spinae plane block, TAP: transversus abdominis plane block. *represents statistical significance.

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The adjunct of TAPB or QLB with the general anesthesia could significantly relieve postoperative pain for laparoscopic sleeve gastrectomy in obese patients.

TAPB and QLB yielded comparable reduction in the consumption of general anaesthetics and analgesics for bariatric surgery.

For QLB, patients were requested to cooperate in a semi-supine position by rotating the surgical table and placing a sterilized towel on the same side of the patient's hip. The 2–5 MHz convex array ultrasound probe was placed in the posterior axillary line between the rib margin and the iliac crest. A 22-G, 150-mm needle passed through the quadratus lumborum muscle, and the needle tip was located between the quadratus lumborum muscle and psoas major muscle. An oval spread of the same local anesthetic in the plane confirmed the presence of the needle in the correct plane [24].

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EO
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Anterior
Posterior

L’**obesità** è inevitabilmente associata ad alterazioni anatomo-fisio-patologiche che possono implicare un **grado variabile di difficoltà di gestione delle vie aeree**, in termini di ventilazione in maschera e di intubazione, pertanto la **possibilità di un’intubazione da sveglio** deve sempre essere poter presa in considerazione

L’intubazione tracheale da sveglio (**Awake Tracheal Intubation - ATI**)

- Prevede il posizionamento di un tubo tracheale in un paziente sveglio e che respira spontaneamente, più comunemente con broncoscopia flessibile (**ATI:FB**) o videolaringoscopia (**ATI:VL**)
- Consente di **proteggere la via aerea** prima dell’induzione dell’anestesia generale evitando i potenziali rischi e le conseguenze di una difficile gestione delle vie aeree in un paziente anestetizzato
- Garantisce **un elevato profilo di sicurezza** perché sia la ventilazione spontanea che il tono intrinseco delle vie aeree vengono mantenuti fino all’intubazione della trachea
- Può **non avere successo nell’1-2% dei casi, ma** raramente porta a strategie di salvataggio delle vie aeree o alla morte

Recommendations

1. Awake tracheal intubation must be considered in the presence of predictors of difficult airway management.
2. A cognitive aid such as a checklist is recommended before and during performance of awake tracheal intubation.
3. Supplemental oxygen should always be administered during awake tracheal intubation.
4. Effective topicalisation must be established and tested. The maximum dose of lidocaine should not exceed 9 $mg.kg^{-1}$ lean body weight.
5. Cautious use of minimal sedation can be beneficial. This should ideally be administered by an independent practitioner. Sedation should not be used as a substitute for inadequate airway topicalisation.
6. The number of attempts should be limited to three, with one further attempt by a more experienced operator (3 + 1).
7. Anaesthesia should only be induced after a two-point check (visual confirmation and capnography) has confirmed correct tracheal tube position.
8. All departments should support anaesthetists to attain competency and maintain skills in awake tracheal intubation.

doi:10.1111/anae.14904

Table 2 Grading of recommendations based on the level of evidence available.

Grade	Level of evidence available
A	• Consistent systematic reviews of RCTs, single RCTs or all-or-none studies
B	• Consistent systematic reviews of low-quality RCTs or cohort studies, individual cohort study, or epidemiological outcome studies • Consistent systematic reviews of case–control studies, individual case–control studies • Extrapolations from systematic reviews of RCTs, single RCTs or all-or-none studies
C	• Case series, case reports • Extrapolations from systematic reviews of low-quality RCTs, cohort studies or case–control studies, individual cohort study, epidemiological outcome studies, individual case–control studies • Extrapolations from systematic reviews of case–control studies
D	• Expert opinion or ideas based on theory, bench studies or first principles alone • Troublingly inconsistent or inconclusive studies of any level

RCT, randomised controlled trial.

DAS ATI technique

OXYGENATE

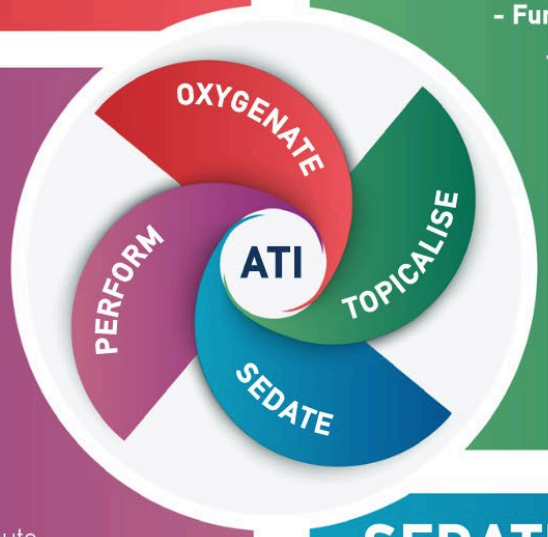
- Apply HFNO early
- Titrate HFNO from 30–70 l.min^{-1}
- Continue HFNO throughout procedure

TOPICALISE

- Lidocaine 10% spray to oropharynx, tonsillar pillars, base of tongue
- 20 – 30 sprays (during inspiration, over 5 min)
- If nasal route: co-phenylcaine spray
- Test topicalisation atraumatically
- If inadequate, re-apply LA up to maximum dose:
  - Further 5 sprays of lidocaine 10% to tongue base
  - 2 ml lidocaine 2% (x 3) spray above, at and below vocal cords via epidural catheter/working channel of FB or using MAD

Lidocaine
- 1 spray (0.1 ml) of 10% = 10 mg
- 1 ml of 2% = 20 mg

Co-phenylcaine
- 2.5 ml = 125 mg lidocaine + 12.5 mg phenylephrine



PERFORM

- Select appropriate tracheal tube
- Patient sitting up
- Ensure operator can readily see patient monitor, infusion pumps and video screen
- Clear secretions
- For ATI:FB
  - Operator positioned facing patient
  - Consider bronchoscope airway if oral route
  - Bevel facing posteriorly
- For ATI:VL
  - Operator positioned behind patient
  - Consider bougie
- Before induction of anaesthesia: two-point check

SEDATE

- Sedate if required
- Remifentanil TCI (Minto) Ce 1.0–3.0 ng.ml^{-1}
- If second anaesthetist present, consider adding midazolam 0.5–1 mg

Table 4 Special circumstances that may affect standard performance of ATI with suggested management options.

Special circumstance	Considerations	Modification	Potential management options
Obesity	Critical adverse consequences of over-sedation	Sedation	Avoid or minimise sedation
	Risk of local anaesthetic overdose	Topicalisation	Local anaesthetic dosing on lean body weight
	Increased oxygen demand and reduced oxygen reserves	Oxygenation	Supplemental oxygen essential
	Diaphragmatic splinting and reduced functional residual capacity	Performance	Sitting position or reverse Trendelenburg Operator facing patient
	FONA more difficult		Identify and mark cricothyroid membrane early Airway ultrasound to identify cricothyroid membrane

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ATI is indicated in any patient with predictors of difficult tracheal intubation or face mask ventilation: these may stem techniques. Traditionally, ATI with a flexible bronchoscope (ATI:FB) was most commonly performed; more recently ATI with videolaryngoscopy (ATI:VL) has developed into a core technique.[3] No single technique has been demonstrated to be superior when both are possible, except in patients with significantly limited mouth opening, tongue or neck deformity. In these situations ATI:FB may be the preferred modality.[3] A dual technique, called video-assisted flexible/fibreoptic intubation (VAFI), requiring both a videolaryngoscope and a bronchoscope has also become increasingly used.[4] The term

flexible bronchoscope or videolaryngoscope), the uncooperative patient and certain airway tumours (with the potential to cause a 'cork-in-bottle' airway obstruction).[3]

Preparation for the procedure

ATI, especially in the context of difficult airway management, is associated with considerable stress for the operator. Consequently, preparation, planning, teamwork and communication are all essential for optimal performance.[12] Recent guidelines support clinical experience that the operating theatre environment is the optimal location for per-

Oxygenation

The indications and clinical scenarios where ATI is considered mandates the use of supplementary oxygen therapy. The incidence of desaturation (Spo_2 <90%) varies depending on the delivery device. High-flow nasal oxygen (HFNO) is the authors' oxygen delivery method of choice with reports of lower incidence of desaturation when compared with low-flow devices.[15] Traditional nasal cannulae or an inverted Hudson mask offer alternative options where HFNO is unavailable.

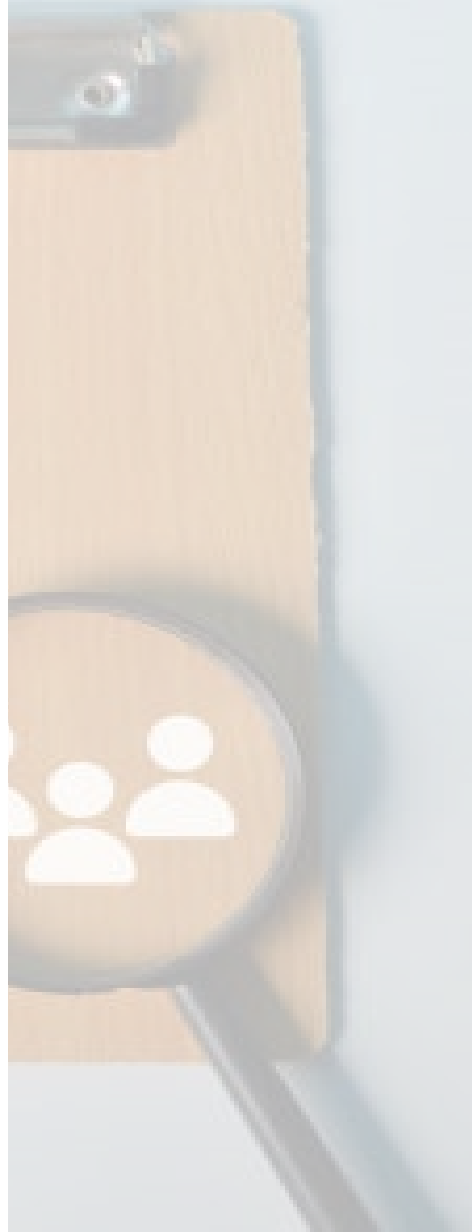
where indicated, and improve its safety when performed. Ergonomics contribute to successful performance of technical skills.[14] No individual set up has been shown to be superior, but one possible layout as suggested by DAS is illustrated (Fig 2). The authors advise that operator, bronchoscope, patient and screen are aligned for optimal comfort.[3] Positioning the patient in the semirecumbent position offers anatomical and physiological advantages to performing ATI.[2]

Topical anaesthesia

Adequate airway topical anaesthesia is vital to the success of

Cricothyroid puncture and transtracheal local anaesthetic injection can provide airway anaesthesia. In addition, if performed with a suitable cannula, it can be used for rescue oxygenation, and provide a conduit for passage of a guidewire facilitating Seldinger tracheostomy in cases of failed intubation or airway obstruction.

Adequate airway topical anaesthesia is vital to the success of ATI techniques. Atraumatic assessment of topical anaesthesia with a soft suction catheter or Yankauer sucker should be performed before ATI attempts.[2] This has the added benefit of clearing any secretions or accumulated local anaesthetic before intubation.



blocks to the superior laryngeal and glossopharyngeal nerves.[16] There is insufficient evidence to recommend a single technique, but nerve blocks are associated with increased plasma concentrations of local anaesthetic.[2] Variation in practice may exist between anaesthetists for achieving airway anaesthesia. The authors' preferred method has proved effective over years of clinical use and is outlined below (Table 1).

Sedation

Awake intubation relies on the ability to secure a patient's airway and maintain spontaneous ventilation. Although awake intubation can be achieved using local anaesthesia alone, sedation reduces the patient's discomfort and improves cooperation during the procedure. However, the practitioner must exercise caution to avoid oversedation, which can cause airway obstruction, respiratory depression or cardiovascular instability, and result in significant morbidity or mortality.[1] A second anaesthetist responsible for managing drug injections should be present to avoid oversedation, and to reduce the cognitive load of the anaesthetist performing ATI.[2] A number of agents are available for sedation and practice varies between practitioners.

Dexmedetomidine

Dexmedetomidine is an agent with α-adrenoreceptor agonist activity with a markedly increased affinity for α_2 over α_1-adrenoreceptors in comparison with clonidine. Effects upon

Other agents

Several agents have been used for procedural sedation or ATI, but negative features mean their use is not recommended. Boluses of midazolam increases the likelihood of oversedation and associated complications.[3] Ketamine has been studied, but intense coughing, agitation and the high rates of recall mean it is not recommended.[17] Propofol boluses, simple infusion and TCI are widely used for sedation, but airway obstruction, coughing and high rates of oversedation mean propofol is not advised for ATI.[2]

10–20 min followed by an infusion starting at 0.7 μg kg^{-1} h^{-1} and titrated to the desired clinical effect at between 0.2 and 1.0 μg kg^{-1} h^{-1}.[18] At the time of writing, no target controlled infusion (TCI) model exists. The long duration of bolus dose required is potentially problematic when ATI needs to be performed urgently.

choice of drug. Appropriate levels of "sedation" for safe AFOI are difficult to standardize, not least because the required combination of anxiolysis and analgesia varies widely from case to case. Moreover, the clinical end points of optimal "sedation" using opioids cannot really be compared with the end points of "sedation" using drugs that are primarily hypnotic. Sedation scores and the use of depth-of-anesthesia monitoring (bispectral index, entropy) may be rational in the future, but, to date, they have been largely confined to trials. On the other hand, basic monitoring modalities (pulse oximetry, electrocardiogram, and noninvasive blood pressure) should be seen as mandatory.

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In cases of critical airway obstruction, avoidance of drugs that depress both conscious level and ventilatory drive, as alluded to above, is recommended. While no one would argue that this recommendation applies to any agent that acts by modulating the $GABA_A$ receptor, there is little evidence that sedation with an agent that depresses ventilation but not level of consciousness (remifentanil) or vice versa (dexmedetomidine) is more dangerous than conducting AFOI with LA alone. Topical anesthesia in patients with critical airway obstruction can be difficult to achieve,[62] and though a rarity, inadequate anesthesia of the larynx or even the application of topical anesthesia itself can precipitate total airway obstruction[63-65] Although there has been a recent description of the use of dexmedetomidine with no use of LA at all,[57] there is generally more evidence supporting the safe use of remifentanil in this fashion, at least in the context of patients without critical airway obstruction.

Table 4 Propertie ...on for AFOI

	Propofol
Patient satisfaction	High[9-11,13]
Recall of events	Low[10-13]
Risk of oversedatic	High[11-13]
Airway obstructior	Yes[11-13]
Bradycardia	No[9-13]
Hypotension	No[9-13]
Respiratory depres	No[8,10-13]
Coughing	Yes[10,11,13]

AFOI = awake fib

Other sedatives and novel drug combinations

Another drug that merits a discussion is the use of ketamine for AFOI. In a well-designed RCT by Belda *et al.*, 70 morbidly obese patients requiring AFOI were randomized to three groups; TCI remifentanil, ketamine (0.3 $mg \cdot kg^{-1}$ *iv*), or remifentanil and ketamine for sedation.[66] All patients were premedicated with midazolam (2 mg). The authors found that the addition of ketamine to remifentanil increased the incidence of intense cough from 12% to 44% but made no difference to the incidence of desaturation, and they concluded that the addition of ketamine to remifentanil offered no advantage. The ketamine only group had an unacceptably high incidence of intense cough (60%), agitation (15%), inadequate level of sedation (10%), and uncomfortable recall (60%), and the authors suggested that ketamine alone is not an adequate sedation strategy for AFOI. A previous case report had described the addition of ketamine to dexmedetomidine for AFOI, and its effects in countering the bradycardia associated with the latter may amount to a better use for this combination.[60]

Systematic Review

Videolary… Tracheal I… Randomi…: Awake …nalysis of …

Raffaele Merola *… and Carmine Iacc… …useppe Servillo

Receiv…
Revise…
Accept…
Publish…

Videolaryngoscopy compared to fiberoptic bronchoscopy for awake tracheal intubation

Patient or population: awake tracheal intubation
Setting: operating room
Intervention: Videolaryngoscopy
Comparison: fiberoptic bronchoscopy

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with fiberoptic bronchoscopy	Risk with Videolaryngoscopy				
Duration of Intubation	-	SMD **1.9671 SD lower** (2.7794 lower to 1.1548 lower)	-	862 (10 RCTs)	⨁⨁◯◯ Low	
Failed intubation	10 per 1.000	**5 per 1.000** (-5 to 14)	**RR 0.4594** (-0.5201 to 1.4388)	808 (9 RCTs)	⨁⨁⨁⨁ High	
First attempt successful intubation	861 per 1.000	**11 per 1.000** (-53 to 74)	**RR 0.0123** (-0.0616 to 0.0863)	845 (9 RCTs)	⨁⨁◯◯ Low	
Oxygen saturation lower than 90%	91 per 1.000	**-64 per 1.000** (-127 to -0)	**RR -0.7040** (-1.4038 to -0.0043)	461 (7 RCTs)	⨁⨁⨁⨁ High	
Sore throat/hoarseness	214 per 1.000	**15 per 1.000** (-103 to 132)	**RR 0.0682** (-0.4803 to 0.6168)	167 (3 RCTs)	⨁⨁⨁⨁ High	
Duration of Intubation with Glidescope	-	SMD **2.5027 SD lower** (4.8733 lower to 0.1322 lower)	-	167 (3 RCTs)	⨁⨁◯◯ Low	
Duration of Intubation with others VLSs	-	SMD **1.7662 SD lower** (2.6636 lower to 0.8688 lower)	-	695 (7 RCTs)	⨁⨁◯◯ Low	

***The risk in the intervention group** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: confidence interval; **RR:** risk ratio; **SMD:** standardised mean difference

GRADE Working Group grades of evidence
High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.
Moderate certainty: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low certainty: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low certainty: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

I pazienti con obesità presentano un **rischio maggiore di complicanze polmonari**

Attualmente il trattamento con **NIV (CPAP)** è indicato solo in caso di **OSAS**

Vi sono crescenti evidenze che suggeriscono un miglioramento dell'ossigenazione in tutti i pazienti bariatrici trattati con NIV nel post-operatorio

I pazienti con obesità possono presentare una significativa perdita di volume polmonare a seguito dell'estubazione, che può essere prevenuta dalla NIV

L'ossigeno ad alto flusso erogato tramite cannula nasale (**HFNC**) sta emergendo come possibile alternativa alla NIV in diversi scenari clinici

We enrolled 15 consecutive subjects undergoing elective laparoscopic bariatric surgery (Roux-en-Y gastric bypass or sleeve gastrectomy) at Department of Perioperative Medicine,

In this sequential physiological study in subjects with obesity undergoing bariatric surgery, HFNC at a flow of 100 L/min was well tolerated and was comparable to 10 cm H_2O CPAP in terms of lung recruitment and ventilation distribution measured through electrical impedance tomography. Thereafter, recruitment could be maintained even with lower flows.

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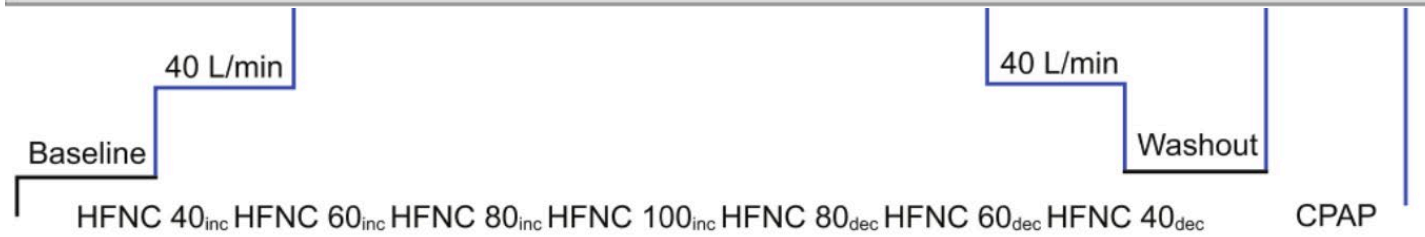

Fig. 1. Scheduled oxygen therapy. The duration of each step/flow was 10 min. HFNC = high-flow nasal cannula; inc = increasing flow; dec = decreasing flow.

S.I.C.OB. EVENTI

RICCIONE, SABATO 12 APRILE 2025

CHIRURGIA DELL'OBESITA: DAL TRATTAMENTO INTEGRATO AL WELLNESS

Resp. Scientifico
Andrea Lucchi

iscriviti all'evento sicobriccione.cloud

La frase più pericolosa in assoluto è: «Abbiamo sempre fatto così»

Grace Murray Hopper

Grazie