



*Corso teorico-pratico*

# L'analgo-sedazione in terapia intensiva

19 dicembre 2008

*Ospedale Marino*

**Farris**

**Puddu**

**Dr. Andrea**

**Dr. Enrica**

# Politrauma da precipitazione

Donna 50 aa,  
60 Kg, 165 cm, BMI 22.

APR:

*Sindrome ansioso-depressiva*

Lormetazepam

Clorpromazina



# Pronto Soccorso



**GCS 15**

**RS, SpO2 95% AA**

**PA 90/60 mmHg, HR 107 bpm**

*Fratture multiple:*

Coste ( arco posteriore IV-V-VI costa dx)

Vertebre D8-L2-L3

Bacino (branche ileo-pubiche; ischio-pubiche;  
acetabolo dx)

Piedi (multiple e pluriframmentarie  
di tarso, metatarso e calcagno)

## **Rx Torace:**

aree disventilate alle basi polmonari.



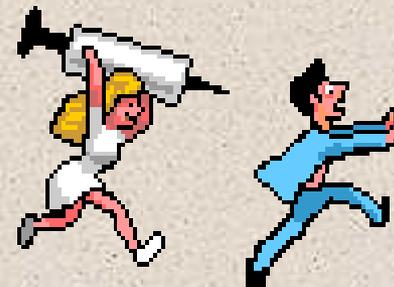
## **TC total body:**

cranio: negativo;

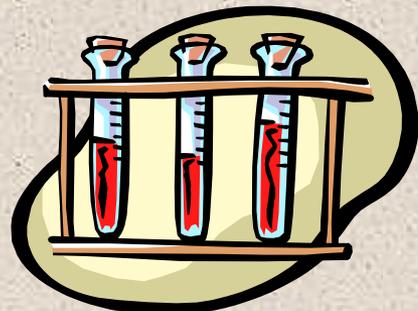
addome: negativo;

torace: versamento pleurico lieve bilaterale,  
atelettasie segmentari dorsali  
campi medi e inferiori.

Emodinamica instabile  
Anemizzazione progressiva  
Distress respiratorio



**Ricovero in UTI**



Sostegno cardiocircolatorio

Trasfusione di EC

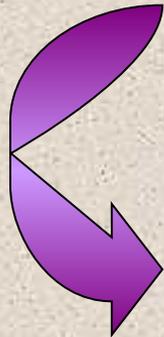
NIV (BiPAP –CPAP)

# GCS 13-14

## Scala sedazione

### Ramsay 1

### SAS 5



*Analgo-sedazione*  
 Sufentanil  
 0,005  $\gamma$ /Kg/min

*Scarsa adattabilità alla NIV*

EGA: pH 7,50, pO<sub>2</sub> 58 mmHg,  
 pCO<sub>2</sub> 35 mmHg, SpO<sub>2</sub> 95%

Table 2. Ramsay scale for assessing level of sedation

Level	Response
1	Patient awake and anxious, agitated, and/or restless
2	Patient awake, cooperative, accepting ventilation, oriented, and tranquil
3	Patient awake, responds to commands only
4	Patient asleep; brisk response to light glabellar tap or loud auditory stimulus
5	Patient asleep; sluggish response to light glabellar tap or loud auditory stimulus but does respond to painful stimulus
6	Patient asleep, no response to light glabellar tap or loud auditory stimulus

Table 3. Sedation-Agitation scale (2)

Score	Diagnosis	Description
7	Dangerous agitation	Pulling at endotracheal tube, trying to remove catheters, climbing over bed rail, striking at staff, thrashing side to side
6	Very agitated	Does not calm, despite frequent verbal reminding of limits, requires physical restraints, bites endotracheal tube
5	Agitated	Anxious or mildly agitated, attempting to sit up, calms down to verbal instructions
4	Calm and cooperative	Calm, awakens easily, follows commands
3	Sedated	Difficult to arouse, awakens to verbal stimuli or gentle shaking but drifts off again, follows simple commands
2	Very sedated	Arouses to physical stimuli but does not communicate or follow commands, may move spontaneously
1	Unarousable	Minimal or no response to noxious stimuli, does not communicate or follow commands

Table 4. Motor Activity-Assessment scale (16)

Score	Description	Definition
0	Unresponsive	Does not move with noxious stimulus
1	Responsive only to noxious stimuli	Opens eyes <i>or</i> raises eyebrows <i>or</i> turns head toward stimulus <i>or</i> moves limbs with noxious stimulus
2	Responsive to touch or name	Opens eyes <i>or</i> raises eyebrows <i>or</i> turns head toward stimulus <i>or</i> moves limbs when touched <i>or</i> name is called <i>or</i> eye
3	Calm and cooperative	No external stimulus is required to elicit movement, <i>and</i> the patient is adjusting sheets or clothes purposefully and follows commands
4	Restless and cooperative	No external stimulus is required to elicit movement, <i>and</i> the patient is picking at sheets or clothes <i>or</i> moving self and follows commands
5	Agitated	No external stimulus is required to elicit movement <i>and</i> attempting to sit up <i>or</i> moves limbs out of bed <i>and</i> does not consistently follow commands
6	Dangerously agitated, uncooperative	No external stimulus is required to elicit movement <i>and</i> patient thrashing tubes by the ends <i>or</i> thrashing side to side <i>or</i> striking at staff <i>or</i> trying to climb out of bed <i>and</i> does not calm down when asked

# Discussione:

Avresti impostato  
questa stessa  
analgo-sedazione?



Intubazione endotracheale e  
Ventilazione meccanica

Vol Gar  
450 ml TV/12 FR  
FiO<sub>2</sub>0.6

*Analgo-sedazione in infusione continua*

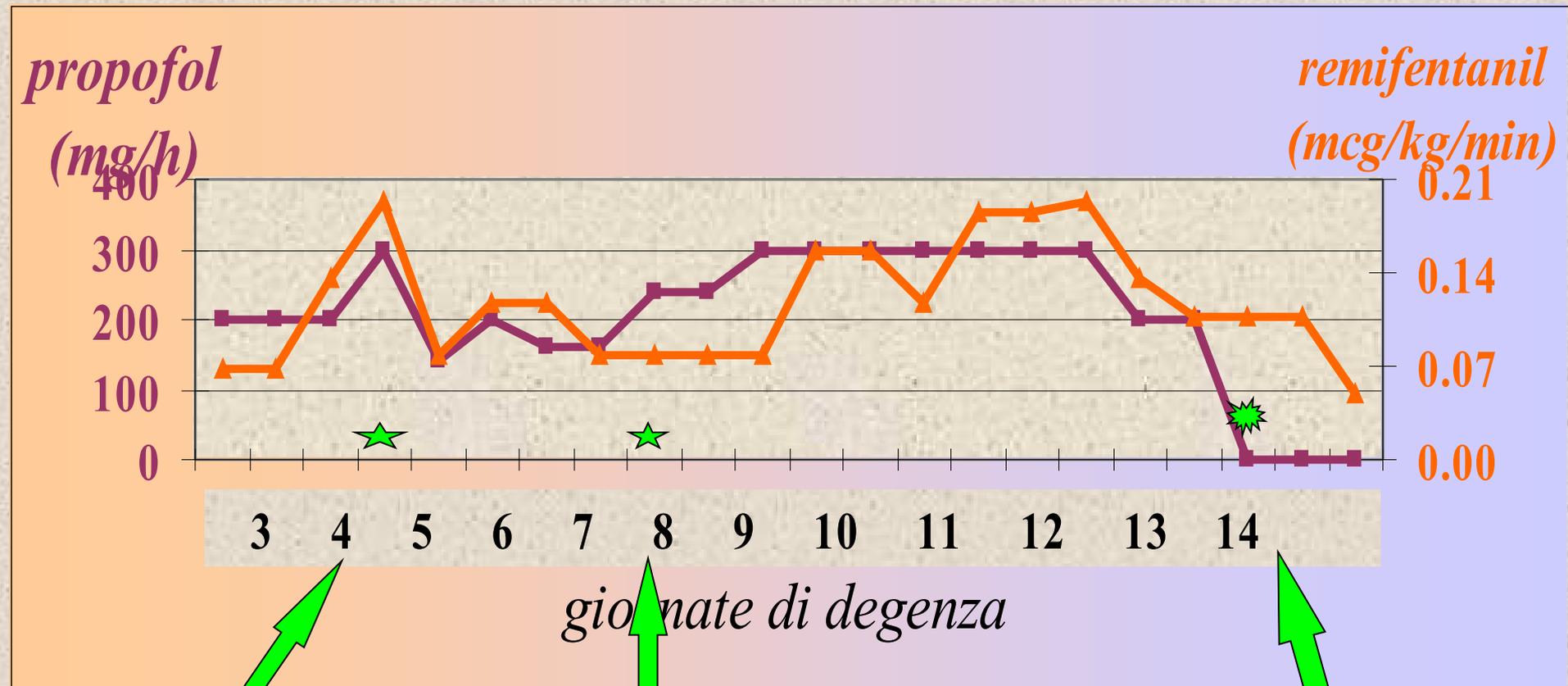
Remifentanil: 0,07  $\mu$ /Kg/min

Propofol: 3 mg/Kg/h

EGA: pH 7,55; pO<sub>2</sub> 98 mmHg;  
pCO<sub>2</sub> 33 mmHg; SpO<sub>2</sub> 99; P/F 163.



# Analgo-sedazione dalla 3<sup>a</sup> alla 14<sup>a</sup> giornata



Stabilizzazione  
L2-L3

Riduzione e sintesi  
fratture piedi

Consulenza psichiatrica

# Discussione:

Avresti impostato  
questa stessa  
analgo-sedazione?



## **Consulenza psichiatrica**

agitazione psicomotoria,

umore depresso

moderatamente orientata nel tempo e nello spazio.

### Terapia psichiatrica:

Escitalopram 10 mg/die

Sodio Valproato 500 mg/die

Alprazolam 15 gtt x 2/die

Lormetazepam 15 gtt/die



# 15ª-20ª giornata

## Finestra neurologica:

movimento spontaneo arti inferiori



localizzazione dello stimolo doloroso



risposta congrua della mimica facciale  
allo stimolo doloroso.



# 15 -20 giornata

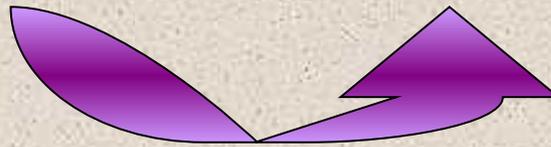
RS valido, tosse efficace

Rx Torace negativa per processi flogistici in atto

Svezzamento ventilatorio

Estubazione.

VenturiMask 35%



Sospende antipsicotici

per aumento degli indici di colestasi

Agitata e depressa

(Scala Ramsay 1, SAS 5)

Supplemento alprazolam (10-15gtt)

# Discussione:

Avresti impostato

questa stessa

Sedazione

per os e al bisogno ?



# 15à-20à giornata

**Deterioramento  
funzione respiratoria**

Intubazione nasotracheale e  
Ventilazione meccanica  
(PSV+ PS 17 cmH<sub>2</sub>O, FiO<sub>2</sub> 0,5)

**Pz agitata, poco collaborante**  
Scala Ramsay 1, SAS 5

TC torace: incremento  
delle atelettasie e  
del versamento pleurico  
bilateralmente

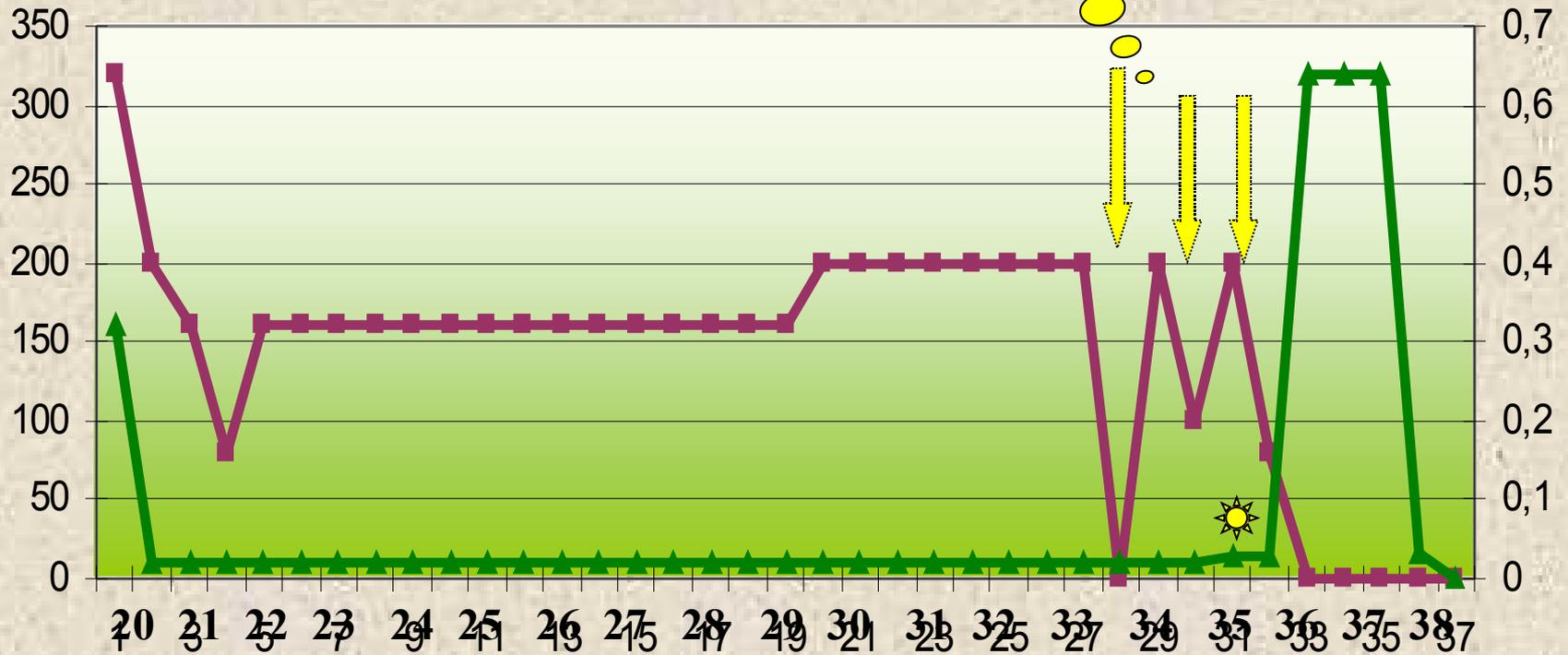
**Sedazione in infusione continua**



# Sedazione dalla 20<sup>a</sup> alla 38<sup>a</sup> giornata

*propofol*  
mg/h

*lorazepam*  
mg/h



*giornate di degenza*

Tracheotomia percutanea

# Discussione:

**“Difficoltà nello svezzamento”**

**“agitazione e delirium”**

***QUALE E' CAUSA E QUALE CONSEGUENZA ?***



Dalla 37ª giornata progressiva lenta  
riduzione della velocità d'infusione del lorazepam

Introduzione in terapia di

**Aloperidolo 10 gtt x 3/die**

**Bromazepam 15 gtt x3/die**

Pz sveglia, collaborante  
(Scala Ramsay 2, SAS 3)

Tono dell'umore alterna  
momenti di angoscia a momenti di serenità

RS valido (rimozione cannula tracheotomica)



# Discussione:

Avresti impostato  
questa stessa sedazione  
combinando  
benzodiazepina e  
antipsicotico?



*à*

## ***48 giornata***

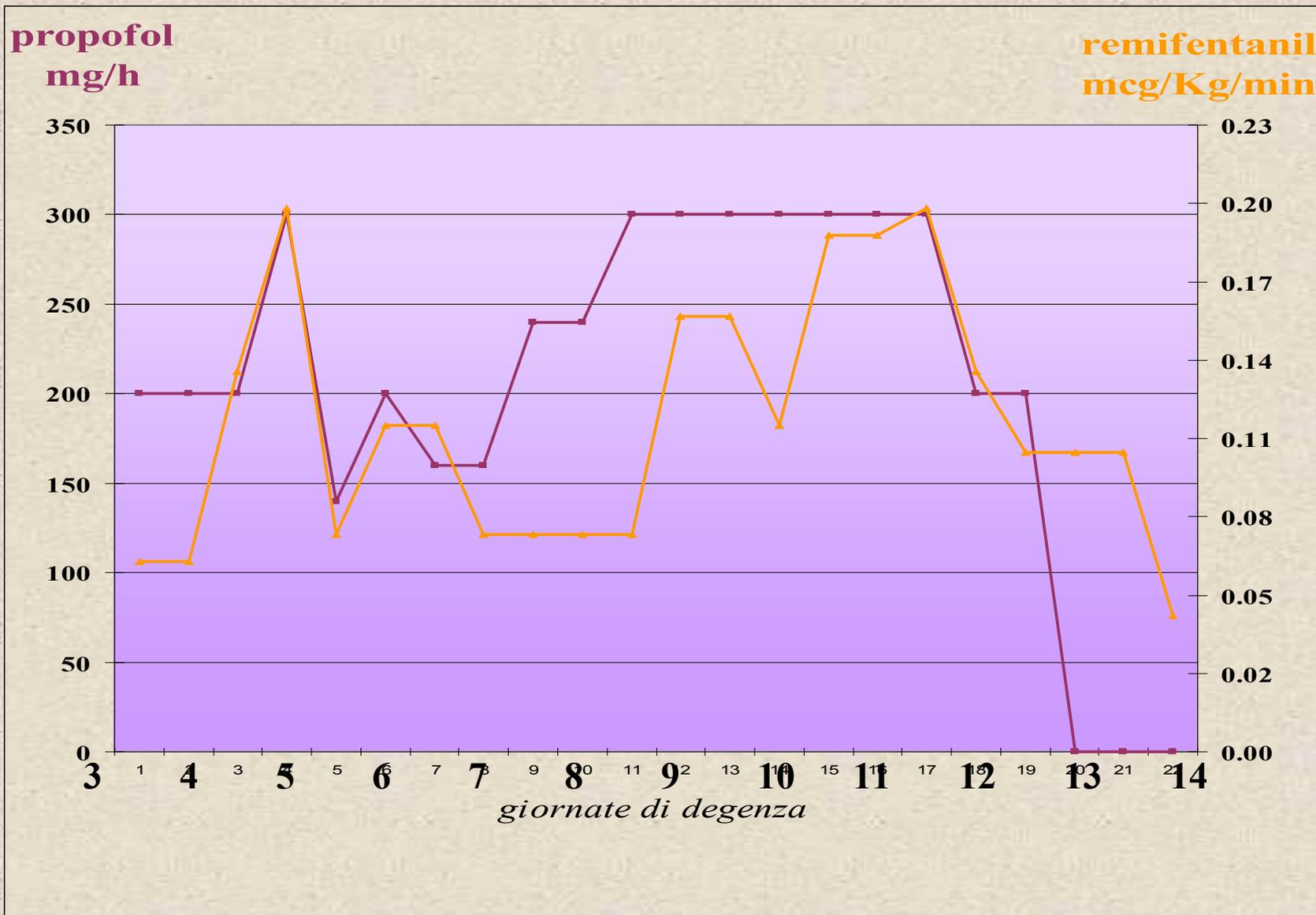
**In equilibrio cardio-respiratorio, metabolico,  
con tono dell'umore stabile  
e soggettivo benessere  
si trasferisce in reparto di riabilitazione motoria.**

***Grazie !***



- Grazie!

# Analgo-sedazione dalla 3<sup>a</sup> alla 14<sup>a</sup> giornata



# Agitazione e delirium

## **Metodo di valutazione del delirium (Confusion Assessment Method, CAM).**

- 1) Insorgenza acuta e decorso fluttuante
- 2) Disattenzione, distraibilità
- 3) Pensiero disorganizzato, idee illogiche o confuse
- 4) Alterazione della coscienza

La diagnosi di delirium richiede la presenza di *entrambi* i sintomi 1 E 2, più il sintomo 3 OPPURE il 4

Adattato da: Inouye S, van Dyck C, Alessi C, et al: Clarifying confusion: The confusion assessment method. *Ann Intern Med* 113:941, 1990.

# Eziologie del delirium

- Ipossiemia/ipercapnia
- Ipoglicemia/iperglicemia
- Ipotensione e ipoperfusione
- Disidratazione
- Disordini elettrolitici (sodio, calcio, magnesio, fosforo)
- Infezione/sepsi (polmonite, infezioni delle vie urinarie)
- **Tossicità o astinenza da alcol, farmaci e droghe**
- Farmaci/carenze vitaminiche (Wernicke)
- Lesioni, ferite, infezioni del sistema nervoso centrale (SNC) (accidente cerebro-vascolare acuto, ematoma subdurale, meningite, encefalite)
- Endocrinopatie (tiroide, surreni)
- Malattie cardiache (infarto miocardico, scompenso cardiaco congestizio, aritmie)
- Ipertermia o ipotermia

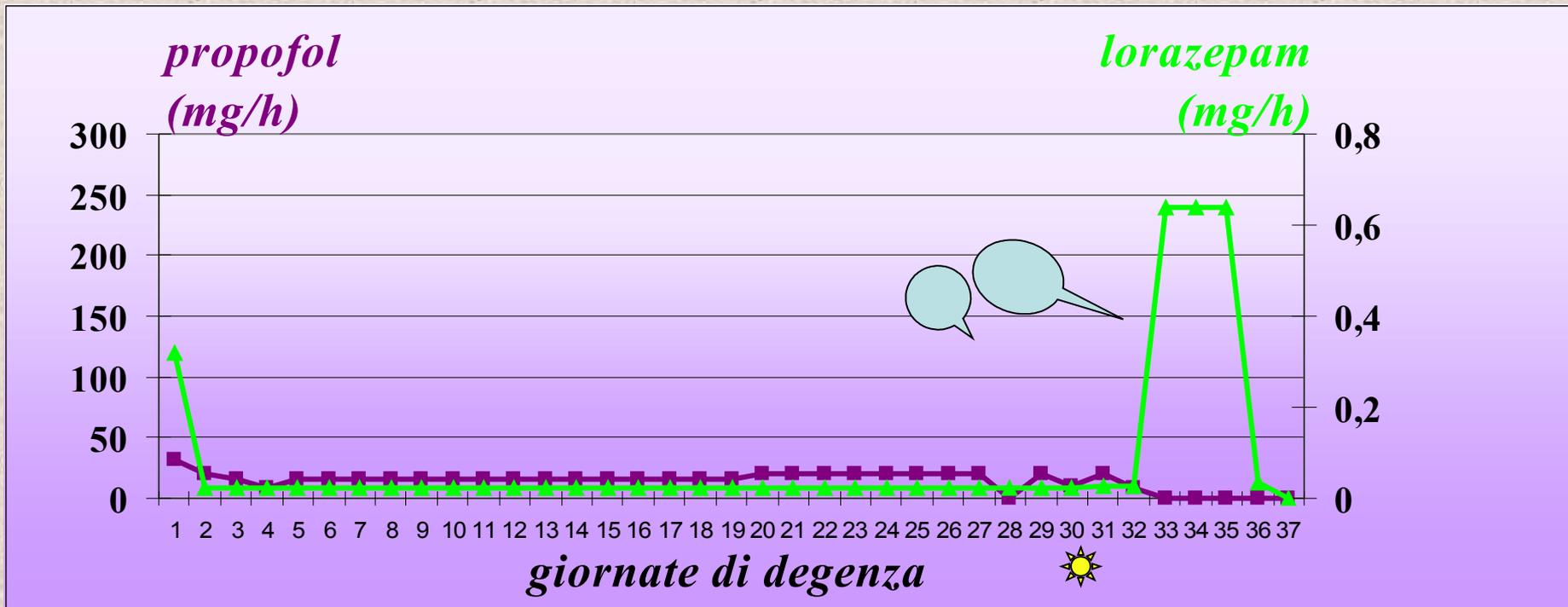
- Deterioramento funzione respiratoria
- TC torace: incremento delle atelettasie e del versamento pleurico bilateralmente

INT (PSV+ PS 17 cmH<sub>2</sub>O, FiO<sub>2</sub> 0,5)

- Pz agitata, poco collaborante

Scala Ramsay 1, SAS 5.

# Sedazione dalla 20<sup>a</sup> alla 38<sup>a</sup> giornata



20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38

Tracheotomia  
percutanea

# **Ramsay Sedation Scale**

## **Level of sedation:**

- 1. Patient is anxious and agitated**
- 1. Patient is cooperative, oriented and tranquil**
- 3. Patient responds to command only**
- 4. Patient exhibits brisk response to light glabellar tap or loud auditory stimulus**
- 5. Patient exhibits a sluggish response to light glabellar tap or loud auditory stimulus**
- 6. No response to stimuli**

# Analgo-sedazione: dalla 3<sup>a</sup> alla 14<sup>a</sup> giornata



Stabilizzazione  
L2-L3

Riduzione e sintesi  
fratture piedi

Consulenza psichiatrica

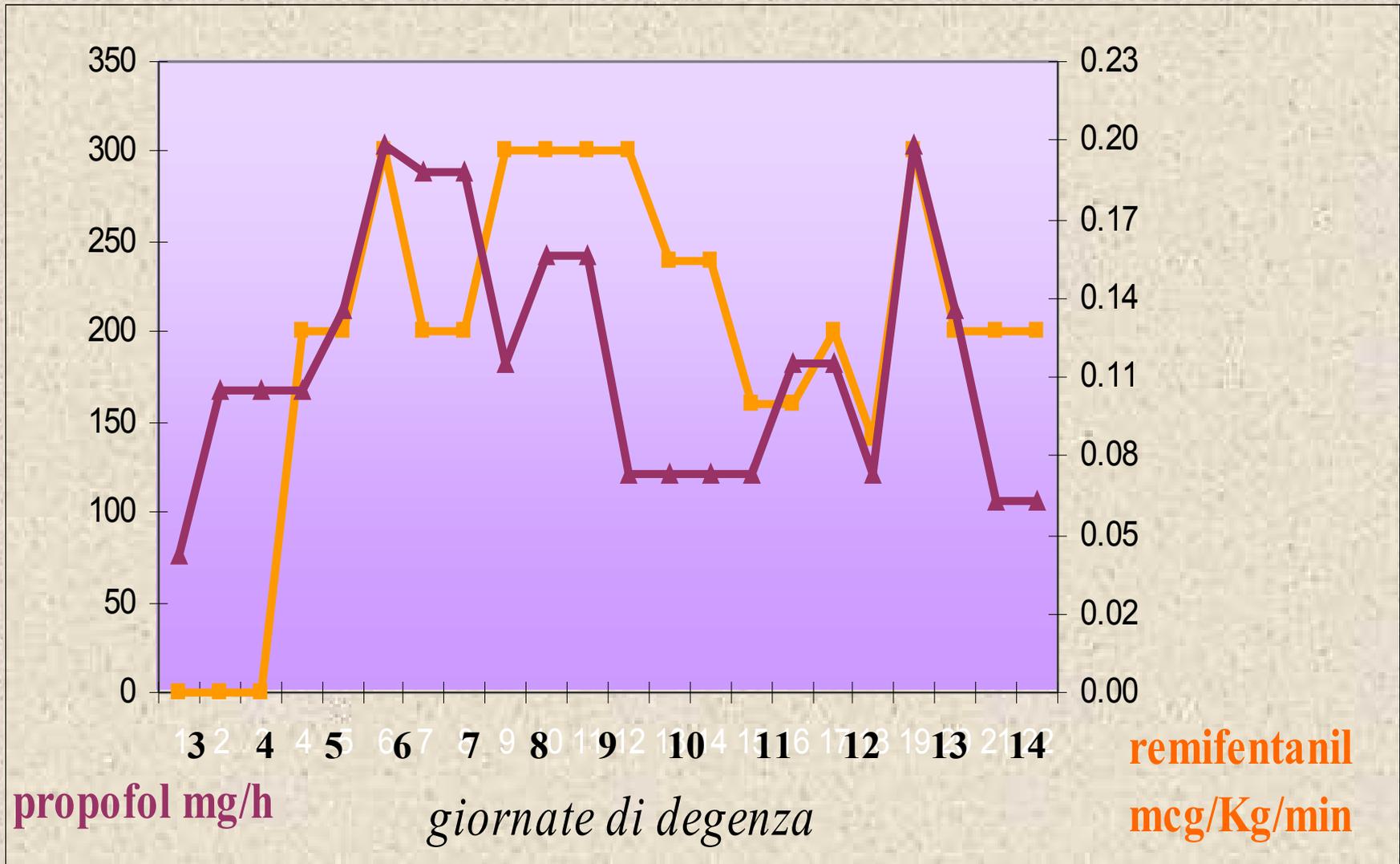
## Richmond Agitation Sedation Scale (RASS) \*

Score	Term	Description	
+4	Combative	Overtly combative, violent, immediate danger to staff	
+3	Very agitated	Pulls or removes tube(s) or catheter(s); aggressive	
+2	Agitated	Frequent non-purposeful movement, fights ventilator	
+1	Restless	Anxious but movements not aggressive vigorous	
0	Alert and calm		
-1	Drowsy	Not fully alert, but has sustained awakening (eye-opening/eye contact) to <i>voice</i> ( $\geq 10$ seconds)	} Verbal Stimulation
-2	Light sedation	Briefly awakens with eye contact to <i>voice</i> (<10 seconds)	
-3	Moderate sedation	Movement or eye opening to <i>voice</i> (but no eye contact)	
-4	Deep sedation	No response to voice, but movement or eye opening to <i>physical</i> stimulation	} Physical Stimulation
-5	Unarousable	No response to <i>voice or physical</i> stimulation	

### Procedure for RASS Assessment

1. Observe patient
  - a. Patient is alert, restless, or agitated. (score 0 to +4)
2. If not alert, state patient's name and *say* to open eyes and look at speaker.
  - b. Patient awakens with sustained eye opening and eye contact. (score -1)
  - c. Patient awakens with eye opening and eye contact, but not sustained. (score -2)
  - d. Patient has any movement in response to voice but no eye contact. (score -3)
3. When no response to verbal stimulation, physically stimulate patient by shaking shoulder and/or rubbing sternum.
  - e. Patient has any movement to physical stimulation. (score -4)
  - f. Patient has no response to any stimulation. (score -5)

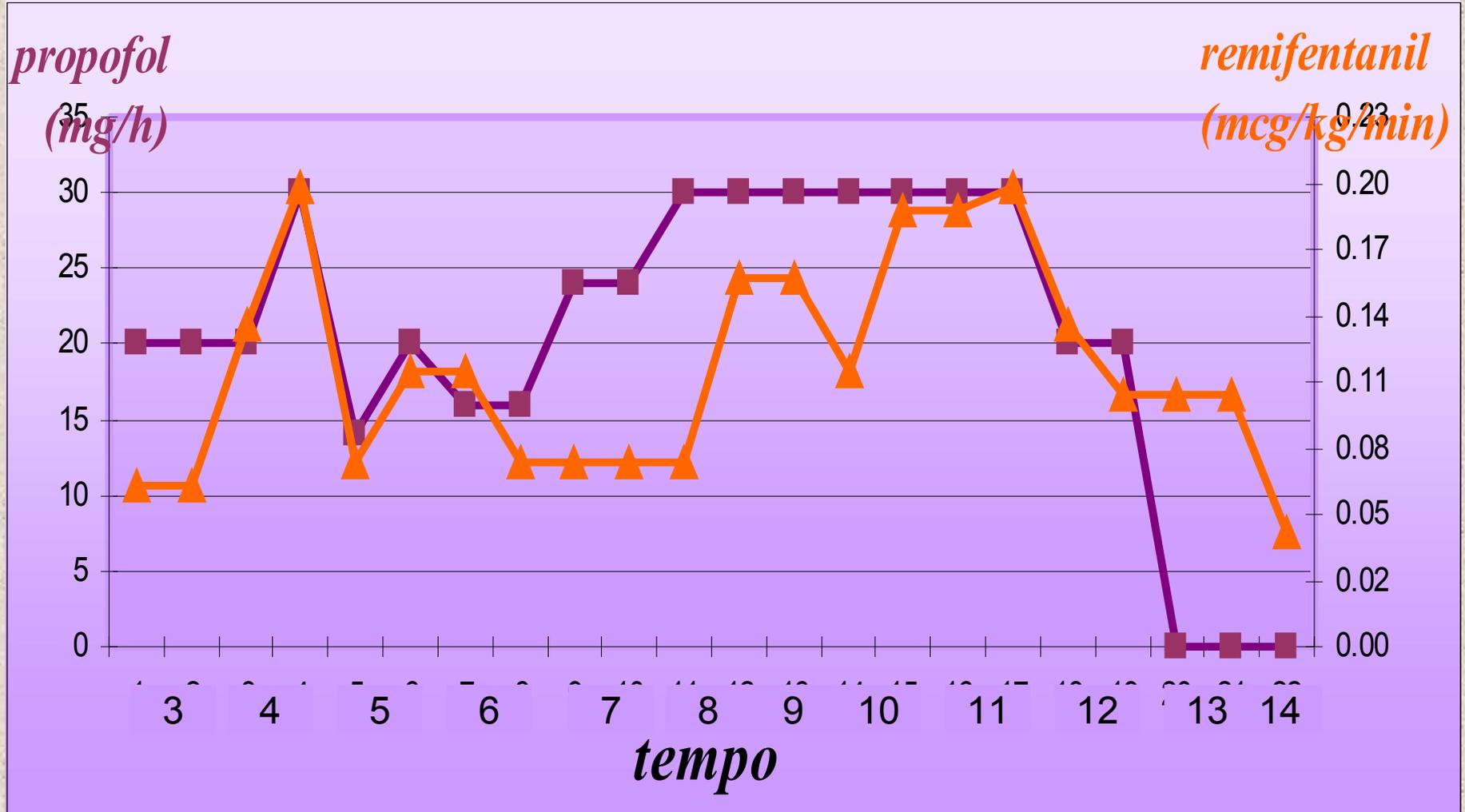
# Analgo-sedazione dalla 3ª alla 7ª giornata

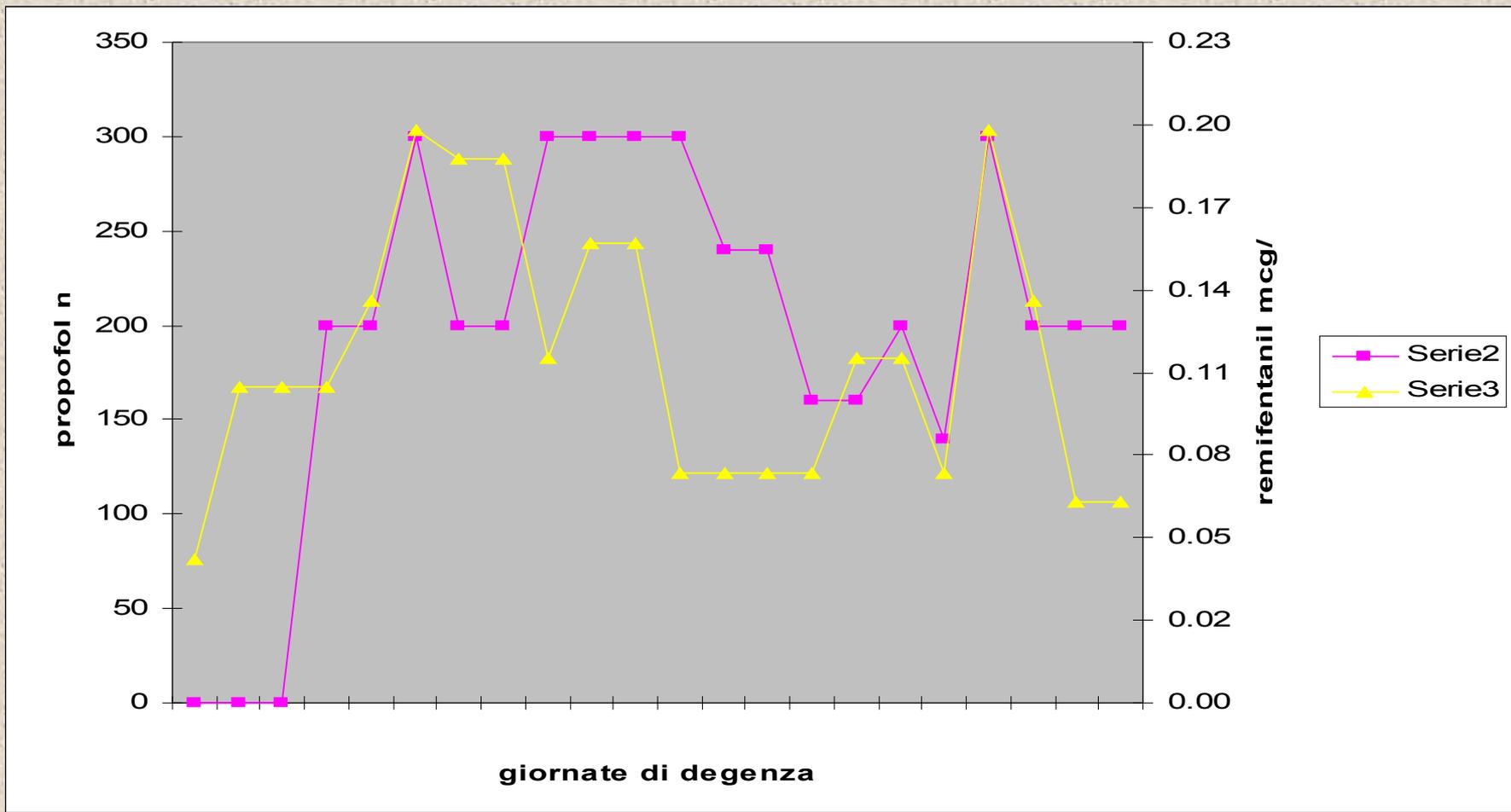


# **Sedation-Agitation Scale (SAS)**

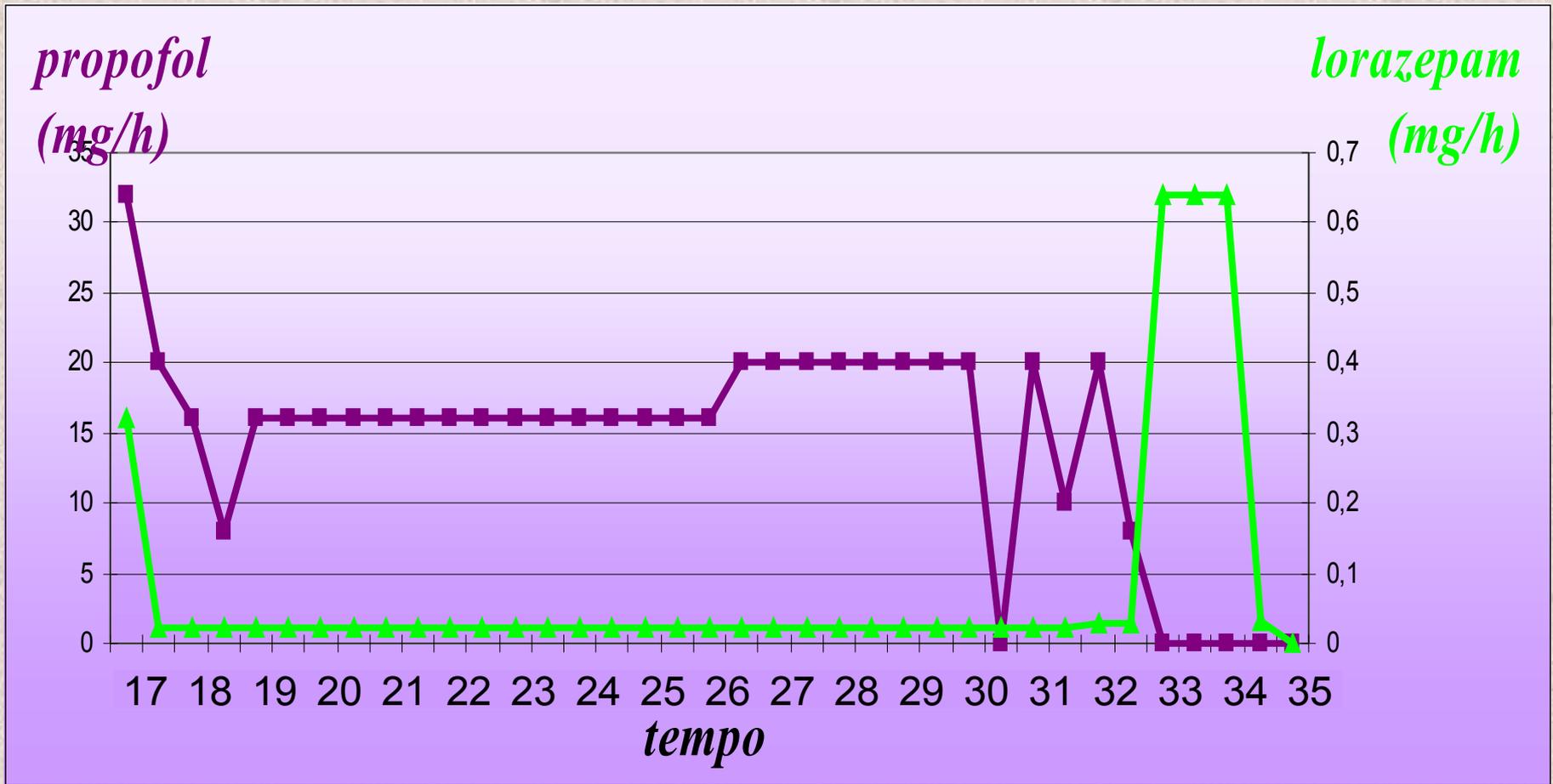
- 7. Dangerous agitation**
- 6. Very agitated**
- 5. Agitated**
- 4. Calm and cooperative**
- 3. Sedated**
- 2. Very sedated**
- 1. Unrrousable**

# Analgesedazione: remifentanil-propofol





# Sedazione propofol-lorazepam



- GCS 13
- Analgo-sedazione
- Sufentanil 0,005  $\mu$ /Kg/min
- Scala sedazione Ramsay 1; SAS 5
- Scarsa adattabilità alla NIV