SASM

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Newsletter

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Message from the President

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The similarities between sleep and anesthesia are such that all aspiring anesthesiologists should acquire a sound understanding of the science of sleep and of common sleep disorders, particularly those associated with respiratory disturbances. For example, understanding the neurophysiology of sleep is a key to appreciating the mechanisms of drug induced unconsciousness as anesthetic agents utilize neural pathways involved with sleep in producing their effects. From a clinical perspective, understanding sleep-related breathing disorders and recognizing patients at high risk of having them provides important forewarning of and insight into the particular difficulties they can present with perioperative airway management and ventilatory impairment.

However, it is the differences between the states that is the source of greatest concern in the immediate postoperative period. The ability to arouse is a fundamental in assuring safety during sleep, yet suppression of arousal responses is a basic component of general anesthesia. Anesthesia is a state of unrousable unconsciousness and involves inhibition of reflexes to noxious and other stimuli, whereas sleep is all too readily disrupted by anxiety, pain and other environmental disturbances such as noise, light and – for that matter - routine nursing observations. While managing the vulnerabilities that accompany suppression of arousal is the everyday business of anesthesiologists, great responsibility attaches to assuring the return and continuing presence of this protective response postoperatively. Excessive sedation with failure to arouse is a feared root cause of postoperative asphyxia. It is, of course, a prime task of the post-anesthesia care unit (PACU) to supervise patients until a stable, rousable state is re-established after general anesthesia. What then? Pre-conditions for discharge from the PACU are the knowledge that rousability has returned and the assumption that it will remain intact thereafter.

Patient-by-patient, this assumption requires critical examination. Is the patient especially vulnerable to impairment of arousal responses?

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In This Issue

Editor's File

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SASM: The Time to be Involved is Now!

With the rapid growth of SASM, there is an enormous amount of enthusiasm that is further fueling the success of our society. As you notice the topics presented in this newsletter are of cutting edge, written by experts in their field. The fact that the experts in the field of anesthesia and sleep medicine are contributing to this newsletter speaks volumes. This shows their commitment in making SASM an exceptional society with members from several specialties working together towards a common goal of improving patient care.

Although Obstructive Sleep Apnea (OSA) has received significant attention in recent years and the studies published on this topic are increasing exponentially, another disease entity that is under appreciated, but can have significant clinical implication, is Obesity Hypoventilation Syndrome (OHS). The first step in avoiding perioperative complications in the OHS patients is having a high index of suspicion, which should allow preoperative recognition of this syndrome and proactively manage this patient population. Edmond Chau, MD, BSc discusses the management of Obesity Hypoventilation Syndrome in the surgical population.

Patients with OSA are at a very high risk of postoperative respiratory distress and failure. Roop Kaw, MD discusses the current controversy surrounding the prevalence of postoperative respiratory failure in this population. The limitations of the various studies assessing postoperative respiratory failure further contribute to the controversy. Non-Invasive Ventilation (NIV) is one of the therapies that could prevent and treat respiratory failure. Isabella Agyekum, MD and Eswar Sundar, MD discuss the current controversy surrounding the use of NIV.

Another complication that has received significant attention in recent years is the risk of fall, which is one of the "never" events that every hospital attempts to achieve. One of the risk factors of fall is the use of sedatives. Bhanu Prakash Kolla, MD, Meghna Mansukhani, MD , and Peter Gay, MD discuss the influence of hypnotic prescriptions and risk of falls in hospitalized patients.

It is through critical analysis of evidence that the incidence of perioperative complications may be reduced. In addition, collaboration between several specialties, including anesthesiology and sleep medicine, should allow better understanding of these complex and controversial issues. Such collaborations are made possible through associations such as SASM. Therefore, I urge you to join our vibrant group and improve patient safety and perioperative outcome through dialogue, education, and research.

The planning for the next SASM Annual Meeting in San Francisco from October 10-11, 2013 is well underway. As you will notice from the included program, the conference directors, Frances Chung, MBBS and Babak Mokhlesi, MD, MSc have identified several clinical as well as research topics that will be presented by the experts in their fields. Please make plans to attend our next conference.

I would like to thank the members of the newsletter committee for their hard work. Without their commitment it would not be possible to publish our newsletters.

I wish you and your family a Healthy and Prosperous New Year. ❖

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Obesity Hypoventilation Syndrome in the Surgical Population

Obesity Hypoventilation Syndrome (OHS) is defined by the triad of obesity (BMI ≥30 kg/m^2), sleep-disordered breathing, and daytime hypoventilation ($PaCO_2$ ≥45 mmHg and PaO_2 <70 mmHg) [1]. Although 90% of patients with OHS also have Obstructive Sleep Apnea (OSA), OHS is a disease entity distinct from OSA and obesity. It is associated with multiple comorbidities and a high risk of mortality if untreated. The prevalence of OHS is estimated to be between 0.15-0.3% in the general population and 8% in bariatric surgical patients [2]. The incidence of OHS is likely to increase as a result of the current global epidemic of obesity and an increasing number of patients with OHS will present for surgery. Currently, literature regarding the perioperative management of OHS is limited.

Compared with the obese patients with eucapnia, those with OHS have four prominent clinical features: severe upper airway obstruction, restrictive pulmonary physiology, blunted central respiratory drive, and pulmonary hypertension [3]. As a result, gas exchange is significantly impaired and consequent daytime hypercapnia and hypoxemia develops. Pulmonary hypertension is present in 30-88% of OHS patients and is primarily secondary to chronic alveolar hypoxemia. The OHS patients have higher mortality than obese eucapnic individuals (23% and 9%, respectively) [4].

The mainstay of treatment for OHS is Positive Airway Pressure (PAP) therapy. The two main forms of PAP therapy, continuous positive airway pressure (CPAP) and bi-level PAP, are shown to be effective. Short-term benefits (<4 weeks) of PAP therapy include an improvement in gas exchange, as shown by normalization of daytime PaO_2 and $PaCO_2$, and reduction in the severity of sleep-disordered breathing, as shown by a reduction of the apnea hypopnea index (AHI) and hypoxemia during sleep [2]. Long-term benefits (≥4 weeks) of PAP therapy include an increase in pulmonary function and central respiratory response to CO_2 [2]. In addition, PAP therapy may also reduce mortality in OHS. In patients who remain hypoxemic and hypercapnic despite optimal PAP therapy, supplemental oxygen, weight-reduction surgery and pharmacological respiratory stimulants, such as acetazolamide, are considered as adjunctive treatment modalities.

The characteristic features of OHS constitute several perioperative challenges including potential difficult airway, increased risk of ventilatory impairment secondary to opioids and anesthetic drugs, and increased cardio-pulmonary comorbidities. The preoperative evaluation of the patient with suspected OHS for elective surgery should begin with a history and physical exam focusing on the airway and cardiopulmonary system. A thorough assessment for coronary artery disease, congestive heart failure, pulmonary hypertension and cor pulmonale should be performed. Screening for daytime hypercapnia can be performed by measuring serum bicarbonate level with a venous blood sample. A serum bicarbonate threshold of 27 mEq/L has a sensitivity of 92% in predicting hypercapnia in OHS patients [5]. For patients at high risk for OHS, a referral for polysomnography and PAP therapy titration should be considered.

Key considerations specific to perioperative management of OHS include prudent airway management, rapid emergence from anesthesia, monitoring for opioid-induced ventilatory impairment, and early initiation of PAP therapy. A multimodal analgesic regimen, consisting of local/regional anesthetic techniques, acetaminophen, and non-steroidal

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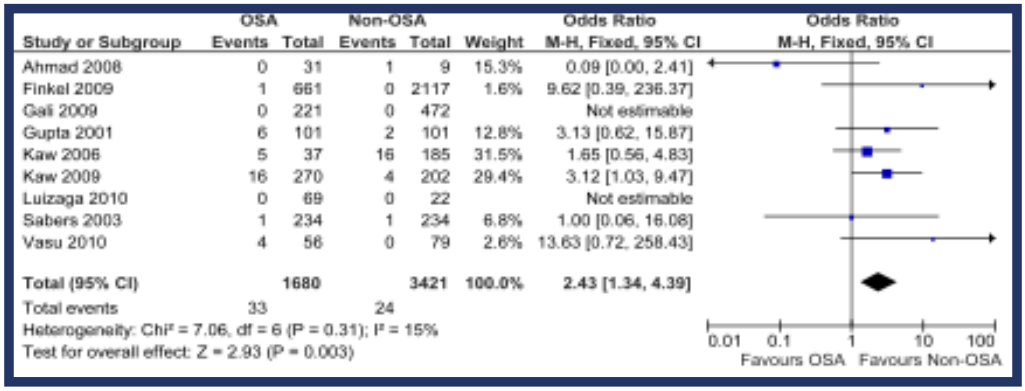
Tracking Postoperative Respiratory Failure: Is it Prime Time for Obstructive Sleep Apnea Patients

Postoperative respiratory failure is one of the major concerns in patients with Obstructive Sleep Apnea (OSA). Early evidence demonstrated reduction in postoperative complications in patients with OSA, with the use of nasal Continuous Positive Airway Pressure (CPAP) prior to surgery and resumed immediately after tracheal extubation [1]. Soon after, Ostermeier et al [2] reported three cases of postoperative respiratory arrest (resulting in death) associated with epidural opioids in patients with OSA. Recently a large study of approximately 50,000 OSA patients undergoing general surgery and 65,000 patients undergoing orthopedic surgery reported a fivefold increase in the need for tracheal intubation and mechanical ventilation after surgery [3]. More recently a meta-analysis of 3,942 patients with OSA reported higher incidence of postoperative respiratory failure (1.96 vs. 0.70, OR 2.43, 95% CI 1.34- 4.39, p=0.003), compared to controls [4] (Figure).



Postoperative respiratory failure has not been consistently reported in different studies evaluating OSA patients, probably due to variation in the definition used as well as variation in sample sizes. Moreover, some of the more recent studies were initiated as quality improvement projects and hence by design report lower postoperative respiratory complications than those reported in the overall surgical population. Among other reasons for variations in reports of postoperative complications include differences in methods used to diagnose OSA (i.e., by clinical screening or by a gold standard test such as polysomnogram) as well as failure of case control studies to use 'true controls' in which OSA was excluded by a formal polysomnogram.

Early reports show that the incidence of respiratory failure may be particularly high amongst patients with Obesity Hypoventilation Syndrome (OHS), which is more likely to be unrecognized before elective non-cardiac surgery [5] (Fig 2).

Although the exact prevalence of OHS among patients with OSA is hard to quantify, recent reports estimate a prevalence between 10 and 20% and higher in the subgroup of patients with extreme obesity. When applied to the largest reported cohort, including 115,000 OSA patients, up to 23,000, patients would be presumed to carry this diagnosis, which is mostly undiagnosed at the time of surgery, since an arterial blood gas analysis is necessary to make the diagnosis and such practice is not part of normal evaluation before non-cardiac surgery, as opposed to cardiac surgery.

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In addition, since postoperative respiratory failure can be triggered by many events or complications, it is not a commonly used ICD-9 diagnosis for billing. Currently the only way postoperative failure can be captured by billing diagnosis is as "acute respiratory failure" or "acute on chronic respiratory failure" or "insertion of endotracheal tube" one or more days after the surgical procedure [6]. This information is important for outcomes researchers using administrative databases, which is increasing being used. Of note, the Agency for Healthcare Research and Quality (AHRQ) has included postoperative respiratory failure as an outcome collected as apart of patient safety indicators. ❖

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Obstructive Sleep Apnea (OSA) is a good example of such vulnerability, as upper airway obstruction will surely occur during sleep and sedation and intact arousal responses are critical in preventing asphyxia and its consequences. Will rousability be critically compromised by postoperative interventions beyond the PACU? Administration of systemic opioids and sedatives, to aid sleep among other things, is of obvious concern here, particularly where a vulnerability such as OSA exists. How can sleep be facilitated, but excessive sedation avoided? Is the patient especially vulnerable to such influences either because of unusual sensitivity to sedative drug effects or because of innately blunted arousal reflexes to chemical or mechanical stimuli? How might such pre-dispositions be identified? Can such problems be circumvented, for example by use of regional analgesia to minimize the need for systemic opioids or sedatives? The anesthesiologist's task could quite reasonably be summarized as a requirement to ensure both satisfactory pre- and intra-operative care AND postoperative circumstances that, among other things, provide preconditions for safe and satisfactory sleep.

These issues occupy the minds of all those involved in perioperative care. They lie at the heart of considerations of the Society of Anesthesia and Sleep Medicine. It our collective task to address these issues through research, education and development of clinical practice standards.

Our next Annual Meeting to be held in San Francisco in October this year will give particular attention to perioperative management and the multi-directional relationships that exist between pain, analgesia and disturbed sleep. In these, as in so many other ways, the concerns of anesthesia and sleep medicine are intertwined: bedfellows indeed! ❖

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Non-Invasive Ventilation: A Breath of Fresh Air?

Non-Invasive Ventilation (NIV) involves the use of a facemask or similar device to provide mechanical positive airway pressure ventilatory support. It is distinguished from invasive ventilation in which mechanical ventilation is provided via a tracheal tube, laryngeal mask airway or tracheostomy. Thus, the benefits of NIV include avoidance tracheal invasion and associated adverse effects. Although the contraindications of NIV are well recognized (Table 1) [1], its benefits remain controversial (Table 2). Several studies have evaluated the usefulness of NIV in avoiding tracheal intubation as well as define a target population for its application; however, the results have been conflicting. The statements from major professional societies maintain that NIV has a relevant role in acute respiratory failure of specific etiologies; however, there is a scarcity of data to support its broad use [2].

In 2004, Esteban et al [3] published results of a multicenter randomized trial that recruited patients from 37 centers in 8 countries. Patients included had received mechanical ventilation for at least 48 h and developed respiratory failure within 48 h of tracheal extubation. Patients were randomly assigned to either NIV or standard medical therapy that involved supplemental oxygen, respiratory physical therapy, bronchodilators and other treatments as directed by the attending physician. The results showed that NIV did not prevent the need for re-intubation or reduce mortality. It is possible that the composition of the study population may explain the apparent failure of NIV, as only a small proportion (i.e. <10%), of the included patients had Chronic Obstructive Pulmonary Disease (COPD).

Table 1: Contraindications to Non-invasive Ventilation

- Inadequately trained staff or monitoring
- Claustrophobic, confused or obtunded patient
- Unstable cardiac status (systolic blood pressure < 90 mmHg or arrhythmias)
- Facial and skull trauma (including past fractured base of skull and pneumoencephalus)
- Inability to cough or clear secretions
- Impending arrest
- Barotrauma (pneumothorax)
- Epistaxis
- Ventilation for respiratory failure

Reprinted with permission from Professor M. Naughton, Inter Med J 2007;37:112-3.

Nava and his colleagues [4] showed that application on NIV immediately after extubation in a broad spectrum of patients reduced the incidence of extubation failure and reintubation compared to a group that received standard therapy after extubation. Since the need for reintubation was associated with a higher ICU mortality, the use of NIV was associated with a reduction in that risk. The study specifically looked at NIV in patients who either had hypercapnic respiratory failure, congestive heart failure, ineffective cough, upper airway obstruction, or previous failure of a weaning trial.

In 2008, Ferreyra et al [5] published an expert opinion examining the validity of the guidelines for NIV during weaning. They performed a systematic review and meta-analysis of pooled data from relevant clinical studies (n=8, including a total of 530 patients), to assess the benefits of NIV in facilitating weaning as well as prevention or management of post-extubation respiratory failure. The meta-analysis provided strong evidence that NIV weaning in patients with COPD was beneficial. The results also clearly supported the utilization of NIV as a preventive treatment for post respiratory failure in patients with hypercapnic respiratory failure and in the obese who are at a higher risk of developing post-extubation respiratory failure. Subgroup analysis showed a 16% absolute reduction in the risk of respiratory failure in obese patients compared to the control group. Overall, intensive

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care unit (ICU) and hospital length of stay were lower in the NIV patients; however in hospital mortality was similar in both groups.

A more recent study of extubation failures after cardiac surgery also found that NIV did not prevent re-intubations in about 50% of patients after extubation [6]. However, NIV was beneficial in preventing reintubation in patients with Body Mass Index (BMI) >30 kg/m^2. Also, NIV allowed avoidance of reintubation in all patients with sleep apnea.

In 2012, Garcia-Delgado et al [7] analyzed the use of NIV in respiratory failure post-extubation in patients after cardiac surgery. They found that re-intubation was necessary for approximately 50% of post-operative cardiac surgical patients treated with NIV for respiratory failure after tracheal extubation and that NIV failure was associated with increased mortality rate. Not surprisingly, subgroup analysis showed benefits in patients with COPD and cardiogenic pulmonary edema. Of note, obesity was associated with NIV success. In addition, early onset of respiratory failure (i.e. less than 24 hours after extubation) was associated with NIV failure.

Table 2: General Indications for Non-Invasive Ventilation (NIV)

Highly recommended (excellent supportive data include meta-analyses)

- Acute hypercapnic chronic obstructive pulmonary disease
- Acute cardiogenic pulmonary edema

May be useful (further study required to determine)

- Acute hypercapnic asthma
- Assist weaning from invasive ventilation
- Acute hypoxaemic respiratory failure in immunocompromised host
- Acute hypoxaemic respiratory failure

In conclusion, NIV remains an important tool in the critical areas of the hospital such as the ICU, post-anesthesia recovery room (PACU) and the emergency room. However, patient selection is critical in order to harvest its benefits. Patients with acute hypercapnic respiratory failure, acute cardiogenic pulmonary edema or obese patients and patients with OSA are most likely to benefit from NIV both as a weaning tool as well as to prevent re-intubation after post extubation respiratory failure. ❖

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anti-inflammatory drugs should be applied to minimize opioid requirements and reduce postoperative opioid-induced ventilatory impairment. Postoperative monitoring represents another important aspect of reducing the risk of opioid-induced ventilatory impairment. OHS patients undergoing major surgery with high opioid requirements should be monitored with continuous oximetry and exhaled CO2. In patients with known OHS who were previously on PAP should resume therapy as soon as possible. In addition, patients with suspected OHS who develop respiratory failure should be treated with PAP therapy empirically.

In conclusion, OHS can significantly influence perioperative outcome. Perioperative management begins with a high index of suspicion for OHS in the morbidly obese patients. An elevated serum bicarbonate level should alert the presence of daytime hypercapnia. Perioperative precautions of OHS include prudent airway management, rapid emergence, monitoring for ventilatory impairment and early initiation of PAP therapy. ❖

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Hypnotic Prescriptions in Hospitalized Patients: Risk of Falls, Morbidity and Mortality

Inpatient falls can extract substantial healthcare costs and result in increased morbidity and prolonged hospital stays [1]. Previous research has shown increased rates of zolpidem use in elderly inpatients who sustained a fall [2]. Zolpidem use has also been shown to be associated with increased rates of hip fractures in community dwelling elderly [3]. A recent study in a large inpatient population provided further evidence of the association between inpatient falls and Zolpidem use [4].

In this study, the authors examined the differences between fall rates in adult inpatients who were prescribed and received Zolpidem and inpatients who were prescribed, but did not receive Zolpidem. A large inpatient cohort (n=41,947), after excluding pregnant patients and patients in the ICU setting, was examined. The hospital pharmacy database was used to identify all patients who were prescribed Zolpidem (n=16,320). The same database, which records all medication administration, was utilized to ascertain which of their patients were administered Zolpidem and also the dose of the Zolpidem administered.

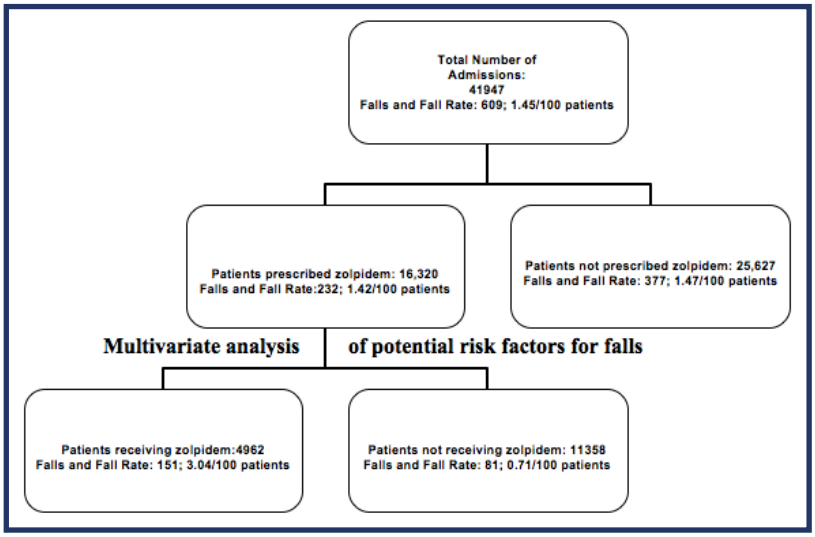

Figure 1: Breakdown of Patient Population and Fall Risk as it relates to Zolpidem Prescription and administration..

All inpatient falls were identified using the nursing event line from the electronic medical record. The authors obtained the age, gender, insomnia, dose of Zolpidem, Charlson comorbidity index, Hendrich's fall risk score, and length of hospital stay from the electronic medical records. The presence of visual impairment, gait abnormalities, and dementia/cognitive impairment in all study patients was ascertained by abstracting the ICD-9 codes for these diagnoses from the electronic medical record.

During the study period, there were 609 unique patients falls (fall rate of 1.45/100 patients) and odds ratio (OR) of falling after Zolpidem administration was 4.37 (95% confidence interval [CI] 3.33–5.74; P <0.001). This risk remained significant even after accounting for all of the potential confounding factors. On multivariable logistic regression analyses accounting for age, gender, insomnia, visual impairment, gait

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abnormality, cognitive impairment/dementia, delirium, hospital length of stay, Zolpidem dose, Charlson comorbidity index scores, and Hendrich's fall risk scores Zolpidem use continued to remain significantly associated with increased risk of inpatient falls (OR= 6.39; 95% CI= 3.07-14.19).

The authors also examined the use of other medications previously shown to be associated with increased risk of falling and found that the rates of opioid, antidepressant, sedative-antidepressant, antipsychotic, benzodiazepine, or antihistamine use was similar in patients who received Zolpidem to those who did not receive it.

Zolpidem use in this study was strongly and independently associated with increased rates of inpatient falls. Hospitalized patients have greater rates of medical co-morbidities, pain and a higher exposure to environmental noise, all of which may disrupt their sleep resulting in the increased use of hypnotic medication. The authors hypothesize that hospitalized patients are usually on multiple medications that might increase their risk of falling. Furthermore, they are in a novel environment where they might have to navigate unfamiliar settings that can increase their risk of falling [5]. This study raises the possibility that the addition of Zolpidem in this scenario may further increase the fall risk.

While previous research has shown that insomnia could in itself be a risk factor for falling [6], this study showed that Zolpidem administration is associated with increased fall risk even after accounting for insomnia. The authors conclude by stating that currently there is little evidence to support the safety of using alternatives to Zolpidem and non-pharmacologic measures to enhance sleep should be explored.

Falling is not the only risk associated with the use of hypnotics. A study sought to estimate the mortality risks associated with specific currently popular hypnotics in a matched cohort design of 10,529 patients who received hypnotic prescriptions and 23,676 matched controls that did not and followed for an average of 2.5 years [7]. They used proportional hazards regression models and also tried to estimate the cancer risks associated with hypnotics. Data was adjusted for age, gender, smoking, body mass index, ethnicity, marital status, alcohol use and prior cancer. They found that patients who were prescribed any hypnotic had substantially elevated hazards of dying (mostly cardiovascular diseases) compared to those who were not prescribed a hypnotic. Further, those in the upper third of regular hypnotic use had a significant elevation of incident cancer; HR=1.35 and were not attributable to pre-existing disease. The authors concluded that even when prescribed <18 pills/year, hypnotic use was associated with greater than three times the hazard of death and an increased incidence of new cancers. The major limitation was that residual confounding could not be fully excluded, due to possible biases affecting which patients were prescribed hypnotics and possible imbalances in surveillance. Also, cohort studies demonstrating an association do not necessarily identify causality, but several other studies support these findings.

Characteristic	Adjusted Odds Ratio of Falling	Lower Confidence Interval‡	Upper Confidence Interval‡	P Value
Zolpidem administration	6.39	3.07	14.49	<0.001
Male Sex	1.24	0.93	1.67	0.14
Insomnia	1.60	1.17	2.17	0.003
Delirium	2.62	1.73	3.88	<0.001
Cognitive Impairment	1.47	0.33	4.53	0.56
Age*	1.04	1.03	1.05	<0.001
Hendrich's Fall Risk Score**	1.30	1.23	1.36	<0.001
Charlson Index***	1.33	1.29	1.36	<0.001
Dose****	0.94	0.82	1.06	0.37

‡ 95% Confidence Intervals
* per 1 year increase in age
* *per unit increase in Hendrich's fall risk score
* **per unit increase in Charlson index
* ***per 1 mg increase in dose

Following peer review and acceptance of this manuscript, the author received new information from the FDA in response to his prior requests that hypnotics trial case files be reaudited for cancer cases and that the outcome be communicated. The FDA compilation did not include Zolpidem, for which FDA concluded there was insufficient information. The following is quoted with permission from a May 22, 2008 letter from Russell Katz, M.D., Director, Division of Neurology Products, FDA Center for

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Society of Anesthesia and Sleep Medicine 2013
October 10-11, 2013 • Moscone Center
Opioids, Respiratory Depression, and Sleep-disordered Breathing (SDB): Perioperative Implications

Thursday, October 10, 2013		
3:00-3:05pm	Introduction to Workshops	Babak Mokhlesi, MD, MSc
3:05-6:00pm	**Moderators:** Peter Gay, MD and Roop Kaw, MD	
3:05-6:00pm	**Workshop 1: Protocol development for the perioperative management of patients with SDB** • Review challenges in implementing a perioperative OSA program (Intermountain Experience: Tom Cloward; Toronto and Singapore Experience: Edwin Seet, MD, Vanderbilt Experience: Michael Pilla, MD) • Discussion/Q&A • How to do PAP therapy: MetroHealth Experience (Dennis Auckley, MD) • Clinical trial design and outcomes to be measured (David Hillman, MBBS) • Discussion/Q&A	
3:05-6:00pm	**Moderators:** Mervyn Maze, MD, Mark Opp, PhD, Richard Horner, PhD	
3:05-6:00pm	**Workshop 2: Basic Science of Sleep** • Upper airway tone and patency in the postoperative period (Atul Malhotra, MD) • Interactive effects of anesthesia, opioids, and sleep on breathing and arousal in the perioperative period (Matthias Eikermann, MD) • Sleep as an immune system regulator during the postoperative period (Mark Opp, PhD) • Discussion/Q&A • Sedation and natural sleep (Mervyn Maze, MB, ChB) • Impact of anesthesia on circadian rhythms (Max Kelz, MD, PhD) • Emergence from General Anesthesia: The Role of Dopamine (Ken Solt, MD) • Discussion/Q&A	
6:00-6:45pm	Welcome Reception	
6:45-8:15pm	Dinner with Invited Speakers:	
	Introduction of the Incoming ASA President: Jane C.K. Fitch, MD	David Hillman, MBBS
	Shared Circuits of Anesthesia and Sleep: Basic Mechanisms and Clinical Relevance	Ralph Lydic, PhD

Friday, October 11, 2013		
7:15-7:55am	Annual General Meeting	
7:00–7:55am	Registration and Continental Breakfast	
7:55-8:00am	Introduction	David Hillman, MBBS
8:00-10:45am	**Moderator:** Babak Mokhlesi, MD, MSc	
8:00-8:50am	***Keynote***: Neural Mechanisms of Sleep and Sedation-Induced Respiratory Depression	Richard Horner, PhD
8:50-9:30am	***Keynote***: Opioids and Central Sleep Apnea	Shahrokh Javaheri, MD
9:30-10:00am	Delirium in Hospitalized Patients, Role of Sleep Disruption, Opioids and Pain	Jacqueline Leung, MD
10:00-10:15am	Discussion/Q&A	
10:15-10:45am	Refreshment Break and Poster Viewing	

Friday, October 11, 2013 continued		
10:45am-12:15pm	**Moderator:** Frances Chung, MBBS	
10:45-11:10am	Should All Postoperative Patients be Monitored on the Wards? Pro	Andreas Taenzer, MD
11:10-11:35am	Should All Postoperative Patients be Monitored on the Wards? Con	Satya Krishna Ramachandran, MD
11:35am-12:00pm	Impact of SDB on Postoperative Outcomes	Babak Mokhlesi, MD, MSc
12:00-12:15pm	Discussion/Q&A	
12:15-1:15pm	Lunch Break and Poster Viewing	
1:15-1:30pm	Awards to Scientific Abstracts Winners	David Hillman, MBBS
1:30-3:15pm	**Moderator:** Roop Kaw, MD	
1:30-2:05pm	Non-PAP and PAP Treatment of OSA Postoperatively	Sairam Parthasarathy, MD
2:05-2:30pm	Sedation and Anesthesia as a Surrogate for Sleep in Clinical Investigation of the Upper Airway	Eric Kezirian, MD
2:30-2:45pm	Discussion/Q&A	
2:45-3:15pm	Refreshment Break and Poster Viewing	
3:15-5:00pm	**Moderator:** Norman Bolden MD	
3:15-3:40pm	Anesthesia, SDB and Bariatric Surgery	Roman Schumann, MD
3:40-4:05pm	Suboxone (buprenorphine/naloxone) and Sleep Disordered Breathing, or Look Out for that Low Ceiling!	Robert Farney, MD
4:05-4:25pm	Pain Management with Opioids in the Postoperative Period and Impact on SDB	Anthony Doufas, MD
4:25-4:45pm	Analgesic Management in Children After Tonsillectomy & Adenoidectomy	Kimmo Murto, MD
4:45-5:00pm	Discussion/Q&A	
5:00pm	i-Pad® Giveaway and Closing Remarks	Babak Mokhlesi, MD

***Tentative Schedule:** Program agenda and speaker selection subject to change.*

"Hypnotic Prescriptions in Hospitalized Patients" continued from page 9

Drug Evaluation and Research. *"We counted a total of 11 organ-specific and 2 non-specific (neoplasm NOS) cancers occurring in the randomized portions of the trials. The 11 organ-specific cancers in the randomized portions of the trials consisted of 1 GI neoplasm, 1 uterine neoplasm, 2 skin cancers, and 7 basal cell carcinomas."* This new FDA compilation appears to strengthen the statistical evidence for cancers associated with hypnotics in randomized trials. Further, it augments evidence that the cancers observed in drug, but not in placebo groups, included cancers outside the skin. However, Dr. Katz stated, *"We do not believe the data discussed in our review provide sufficient evidence of a causal association to recommend a specific regulatory action at this time."* ❖

References

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7 Kripke DF, Langer RD, Kline LE. Hypnotics' association with mortality or cancer: a matched cohort study. BMJ Open 2012;2:e000850. doi:10.1136/bmjopen-2012-000850.

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