2014-2015

# NEWSLETTER

## PAKISTAN SOCIETY OF ANAESTHESIOLOGISTS
## KARACHI - CHAPTER

Volume 18:
Issue 02, October 2014



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## EDITOR'S NOTE

World Anaesthesia Day is celebrated to commemorate the first successful public demonstration of ether anaesthesia by William Thomas Green Morton, on 16 October 1846, at the Massachusetts General Hospital in USA. This is considered to be one of the most significant events in the history of medicine as it became possible for patients to obtain the benefits of surgical treatment without the pain associated with an operation.
This is the day pain died and the era of modern anaesthesia began.

**Dr Madiha Hashmi**
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## BACKACHE AND REGIONAL ANAESTHESIA IS IT A MYTH?

Central neuraxial blocks are popular for normal vaginal deliveries, cesarean sections, and various surgeries below the umbilicus. Their use, particularly subarachnoid anesthesia has increased since 1980s.
Transient symptoms like backache, which occurs in about 13.1% cases, may be one of the risks associated with regional procedures. This backache is a common reason for physician visits and psychological, physical and economic burden and in one study was the major cause for patients refusing spinal anaesthesia. Reported incidence of backache is higher in Asian women. One study from Pakistan[1] showed that in a total of 246 female patients, eighteen (7.32%) complained of severe postoperative backache and 93 (37.8%) had no backache at all.

In terms of regional anaesthetic factors leading to backache, injecting saline or local anaesthetic into the interspinous ligaments, development of a supraspinous hematoma, excessive stretching of ligaments after relaxation of paraspinal muscles, localized trauma and duration of surgery should be considered[2]. While needle size and needle type have not been shown to have an influence on incidence of backache, the number of attempts and repeated epidurals correlates with an increased likelihood. Patients with low pain tolerance may opt for epidural anesthesia with an increased likelihood to complain of subsequent backache. A prolonged second stage of labour after epidural may also be a determinant. In a study on 918 patients by Shaheen and Colleagues 431 women had preexisting backache before presenting for Caesarean delivery. It may also be linked to the patient lying in an awkward position for a long period of time rather than the actual procedure itself since the patient's sensations are reduced. Deyo and colleagues[3] state that the source of acute low back pain cannot be identified in 85% of patients.

In one study rate of backache was similar whether the patient received epidural or general anaesthesia[3]. Prenatal preconditioning of the patient in particular and family in general by the obstetrics colleagues ameliorates many concerns. In terms of anesthetic preparations, a detailed history of previous episodes of backache and spinal injuries/surgeries should be recorded. An experienced anesthetist should provide the regional block and supervise proper positioning and subsequent transfer of the patient. Transient backache secondary to regional blocks may require simple analgesics and reassurance.
In conclusion, backache after regional anaesthesia remains a controversial issue, and resolution does not seem easy.

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**UPCOMING CONFERENCES / MEETINGS / SYMPOSIA**

**Ultrasound Guided Regional Anesthesia And Vascular Access Workshop**
Miami, Florida
December 10, 2014

**5th Annual Winter symposium in Intensive Care, Anaesthesia and Emergency Medicine**
Vail, Colorado
January 11-16, 2015

**43rd International Congress of Intensive Care Medicine**
Paris, France
January 21-23, 2015

**SCCM Annual Congress by Society of Critical Care Medicine, Phoenix,**
Arizona, USA
January 17-21, 2015

**ISICEM, International Symposium of Intensive Care and Emergency Medicine,** Brussels,
March 17-20, 2015

**6th NWAC World Anesthesia Convention 2015**
Vancouver, Canada
April 29-May 2, 2015

**German Society of Anaesthesiology &Intensive Care 62nd Annual Meeting 2015 (DAC 2015)**
Dusseldorf
May 7-9, 2015

**Euro-anaesthesia 2015**
Berlin, Germany
May 30 June 2

## ACCIDENTAL AWARENESS DURING GENERAL ANAESTHESIA

While "Accidental Awareness under General Anaesthesia"(AAGA) may be an infrequent & unimportant event for an anaesthetist, it is of extreme significance to the patient who suffers because it results in major psychological sequelae including "posttraumatic stress disorder" (PTSD). The incidence of AAGA is much higher, (0.1-0.2%), than most practicing anaesthetists believe.

General Anaesthesia creates a state of hypnosis with suppression of responses to noxious stimuli. There are gaps in knowledge regarding, the biological basis for GA and whether overlap exists between consciousness and memory. Research also continues whether genetic variation in GABA receptors structure amongst individuals is responsible for variable sensitivity to anaesthetics. The clinical dilemma is aggravated by the lack of end points for GA. MAC a classic indicator of anaesthetic potency actually denotes suppression of spinal cord activity. Secondly response to verbal command is a subjective end point with no measurement. Thus lack of a "unit of anaesthesia" and absence of "quantitative dimensions" due to inter-patient and inter-anaesthetic variability is a major obstacle to determine and prevent AAGA.

**Levels of AAGA**

1. Conscious Awareness without Amnesia. (Explicit memory). Patient recalls, remembers & responds. The worst form of AAGA.
2. Conscious Awareness with Amnesia. (Implicit memory). Patient does not recall however responds with no memory.
3. Subconscious Awareness with Amnesia. Remembers only under hypnosis.

**Predisposing factors.**

1. Type of patient. Variability of receptors and dose, young females, low cardiac reserve, drug abuse, difficult intubation, masking factors like b-blockers, pacemakers and H/O AAGA.
2. Type of surgery. Obstetrics, cardiac, trauma, daycare.
3. Technique. Overly light anaesthesia, use of NMB, Nitrous oxide-Narcotic anaesthesia, human error like an empty vaporizer, syringe swap, malfunction of equipment.
4. Tertiary care hospital. Sensitivity to the issue, presence of detection tools, better reporting & follow up.

**Monitoring depth of anaesthesia (DOA).**
There are no 100% sensitive or specific tools to monitor DOA. Functional condition of the "TARGET ORGAN-BRAIN" can only be judged indirectly by

1. EEG changes, Bispectral index BIS, (Processed EEG correlating a number with DOA), Evoked Potentials (BAEP, SSEP, VEP). However these monitors quantify neuronal suppression and do not measure consciousness, memory or AAGA.
2. ETAC. (End tidal anaesthetic concentration) vs BIS have shown identical results in depicting DOA ( 0.7-1.3 vs 40-60)
3. PRST scoring. Autonomic signs can and should not be used as an index of DOA.
4. Isolated Forearm Technique,(IFT)& Loss of oesophageal contractility (LOC).

**Structured interview, "Brice Protocol"** is presently considered as the most effective tool to diagnose AAGA.
It comprises of 5 discrete questions.

1. What was the first thing you remember after the operation?
2. What was the last thing you remember before you went to sleep?
3. Can you remember anything between these periods?
4. Did you dream during the operation?
5. What was the worst thing about your operation?

**Prevention**
Vigilance of anaesthetist and ensuring adequate anaesthesia AT ALL TIMES are imperative. Intubation, extubation, muscle relaxation and hemodynamic instability are all associated with AAGA. Use of amnesics, careful use of NMB and not using opioids as a sole anaesthetic is advisable. Auditory sensations should be prevented and DOA monitored in specific cases.

**Management**
The anesthetists should be sensitive to AAGA and accept it in case of this tragic event. Reassurance and counseling with documentation are important strategies to follow. Information for future anaesthetics should be made available to preempt and prevent future episodes.

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### AMBULATORY ANAESTHESIA - FEASIBILITY IN LIMITED RESOURCE SETTINGS

Ambulatory or day case anaesthesia is the technique designed to facilitate surgery which does not require pre or postoperative overnight stay in hospital and uncomfortable or painful diagnostic and therapeutic procedures within and outside operating rooms.

To minimize length of hospital stay the anaesthesia techniques are tailored to allow "fast tracking", a majority of patients can be transferred directly from OR suite to the less labor and resource intensive phase II recovery area (where the fully awake patient may stay till able to tolerate liquids, walk and void), by passing phase I recovery or PACU. Earliest discharge recommended is 2 hours after procedure. One very important advantage of reduced length of hospital stay is reduction of chances of nosocomial infections and this also significantly reduces overall cost for all stakeholders.

However there is a need for a carefully planned infrastructure for ambulatory anaesthesia and surgery to ensure patient safety.

**Suitable day case Procedures are those in which**

1. Postoperative care is easily managed at home
2. There is a low postoperative complication rate such as nausea vomiting, pain and bleeding
3. Anticipated length of surgery is such that there is time for discharge readiness the same day

**Patient selection**
ASA I & II and ASA III & IV patients whose disease is medically stable are suitable for day case surgery. Age ranges from more than 60 weeks post conceptual age to geriatric. An attendant should accompany the patient and be available at home and house should be located within easy access to health care facility.

**Preoperative evaluation should be as for inpatient surgery and a** Telephonic interview and Questionnaire may be used to expedite the process and minimize delays.

**Drug selection**
Drugs with rapid onset of effect, maximal titratability and rapid uneventful reversal with minimal residual drug effects are preferred. Avoidance of nitrous oxide reduces chances of PONV. Propofol infusion in combination with low dose ketamine is becoming popular in day cases. Suxamethonium is best avoided due to risk of myalgia up to 4$^{th}$ postoperative day. Avoidance of reversal agents reduces PONV. Multimodal balanced analgesia minimizing use of narcotics and multimodal prophylaxis and therapy with metoclopramide, ondansetron, droperidol, promethazine and dexamethasone reduces PONV.

**Spinal, epidural, caudal anaesthesia as well as peripheral nerve blocks** can be used in day cases.Low dose spinal anaesthesia and unilateral spinal anaesthesia with 25-27 G pencil point needle reduces chances of delayed ambulation, urinary retention, postural hypotension and PDPH

Standard ASA monitoring is recommended with additional bispectral index monitoring to minimise anaesthesia requirement without affecting amnesia.

**Discharge Home Criteria**
The patient should be fully awake, haemodynamically stable, free of pain, nausea and vomiting, preferably able to walk and void. They should receive clear verbal and written instructions for management and follow up.

**Conclusion**
Cost reduction to all stakeholders (patient, health care giver, third party payer) was the major driver for day case surgery and anaesthesia with an added advantage of decreased incidence of nosocomial infections. Ambulatory anaesthesia and surgery is therefore justifiably the way forward in limited resource settings by enabling optimization of resource allocation.

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## RECOMMENDATIONS FOR PERIOPERATIVE FASTING IN ADULTS AND CHILDREN (GUIDELINES FROM EUROPEAN SOCIETY OF ANAESTHESIOLOGY)

### Fasting in Adults and Children

*Adults and children should be encouraged to drink clear fluids (including water, pulp-free juice and tea or coffee without milk) up to two hours before elective surgery (including caesarean section)

*All but one member of the guidelines group consider that tea or coffee with milk added (up to about one fifth of the total volume) are still clear fluids*

* Patients should not have their operation cancelled or delayed just because they are chewing gum, sucking a boiled sweet or smoking immediately prior to induction of anaesthesia

*The above is based solely on effects on gastric emptying and nicotine intake (including smoking, nicotine gum and patches) should be discouraged before elective surgery*

Patients with obesity, gastro-oesophageal reflux and diabetes and pregnant women not in labour can safely follow all of the above guidelines However, these factors may alter their overall anaesthetic management

Solid food should be prohibited for **six hours** before elective surgery in adults and children

### Fasting in Infants

It is safe for patients (including diabetics) to drink carbohydrate-rich drinks up to two hours before elective surgery

*The evidence for safety is derived from studies of products specifically developed for perioperative use (predominantly maltodextrins); not all carbohydrates are necessarily safe*

Drinking carbohydrate-rich fluids before elective surgery improves subjective well-being, reduces thirst and hunger and reduces postoperative insulin resistance

*To date there is little clear evidence to show reductions in length of postoperative stay and mortality*

### Fasting in Obstetric Patients

Women should be allowed clear fluids (as defined above) as they desire in labour. Solid food should be discouraged during active labour

*The guidelines group recognize that it may be impractical to stop all women from eating during labour, especially low-risk women. Consideration should be given to easily digestible, low-residue Foods*

### Prokinetic and Other Pharmacological Interventions

There is insufficient evidence of clinical benefit to recommend the routine use of antacids, metoclopramide or H2 receptor antagonists before elective surgery in non-obstetric patients. An H2 receptor antagonist should be given the night before, and on the morning of, elective caesarean section

*The guidelines group recognises that most of the evidence relates to surrogate measures, such as changes in gastric volume and pH, rather than a clear impact on mortality*

An intravenous H2 receptor antagonist should be given prior to emergency caesarean section; this should be supplemented with 30 ml of 0.3 M sodium citrate if general anaesthesia is planned

*The guidelines group recognises that most of the evidence relates to surrogate measures, such as changes in gastric volume and pH, rather than a clear impact on mortality*

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## WORLD SEPSIS DAY 2014