

# Frequency of Cognitive Impairment and Related Factors of Postoperative Recovery Room

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**Citation:** Emadi N, Dastras M, Soheilzadeh S, et al. Frequency of Cognitive Impairment and Related Factors of Postoperative Recovery Room. *Electronic J Biol*, 12:3

**Received:** March 07, 2016; **Accepted:** April 29, 2016; **Published:** May 05, 2016

## Research Article

### Abstract

Cognitive deficits of these disorders, delirium syndrome is of high importance in brain function among the crucial issues and after surgery that is associated with loss of consciousness and the common problem of patients admitted sector, which is less recognized. Its incidence in critically ill patients is 80 -10%. This study aimed to investigate prevalence of cognitive impairment in recovery room and related factors can predict those at risk of delirium after surgery to help diagnose this disorder we have to reduce its complications. In this descriptive study on 100 patients who were referred for surgery was performed in the hospital operating room of Khash. The subjects before surgery, including personal interviews and surgery was performed and recorded in questionnaire. After surgery, type of surgery and duration of anesthesia and surgery, patients were recorded. Also at time of discharge patients were studied by Neecham's dizziness questionnaire for cognitive impairment after surgery. The results showed that of the 100 patients studied, 58 % were male and 44% female, mean age 38.20 % of people were addicted. Severe dizziness was observed in 28% of cases. According to the results elderly and low education, laparotomy and orthopedic surgery under general anesthesia were long time are more prone to confusion and vulnerability. Therefore, to assess cognitive impairment in these patients who are undergoing surgery can recognize, treat and even prevent delirium in hospitalized to promote.

**Keywords:** Cognitive disorders; Delirium; Recovery room.

### 1. Introduction

Cognitive disorders are critical and psychological issues after surgery [1]. These disorders can interfere with medical conditions and is intensifying.

They can improve treatment of underlying disease process and improve quality of life of patients and their health care costs. On the other hand, decreased cognitive disorders, delirium have high importance [2]. Delirium (Delirium) Acute and transient disturbance in brain function and clinical disorder known less and less recognized. According to DSM-IV (Diagnostic and Statistical Manual of Mental Disorders) and cognitive delirium is disturbance of consciousness that occurs within a short time and has this profile: 1) Change in level of consciousness, such as loss of consciousness 2) shifting attention include poor concentration and memory 3) Location of disturbance 4) rapid onset and short swaying Siri 5) Cognitive Impairment 6) movement disorders 7) sleep disorders [3]. Garlic symptoms of this syndrome is raging quality evening and in early hours of evening is especially acute delirium with difficult diagnosis makes this quality [4]. Delirium is disease inside and outside central nervous system but factors outside central nervous system of more severely [5]. The most important risk factors for delirium can be dementia, older age, severe underlying diseases, patient overall performance disorders, chronic renal failure, and malnutrition and alcohol abuse, sensory perception disorders [6]. Some of the incidence of delirium after surgery is Neurotransmitter disorders, most notably melatonin, norepinephrine and activity is Anticholinergic [7].

Delirium is associated with poor prognosis and increased mortality, prolonged hospital stay, increased costs and reduced inpatient rehabilitation, cognitive performance degradation; increased risk of dementia patients is very low quality of life [8].

The most common problems among patients hospitalized postoperative delirium sector statistics related to memory (50-18Drsd), cardiac surgery (34-7%), intensive care (83-16%) [1]. As well as its incidence in critically ill patients is 80-10% [9].

Patients who develop delirium during their hospital stay, 75-27% mortality rate in same bed and 15% of these patients die within month and 25% within 6 months [1]. Every year more than 3.2 million elderly person deliriums in hospitalized patients is more than 17.5 million days of hospitalization, causes and also led to more than \$ 4 million in health care costs [10]. Despite importance of this syndrome survival and colleagues, according to study in Kerman hospital, physicians, and hospital personnel only able to detect delirium are less than 13% of cases [4]. So, early detection and treatment to reduce duration and severity of delirium is key factor in its negative results. If we can identify patients prone to delirium after surgery, then interventions can be done to prevent this complication. Therefore, understanding the predictors of postoperative delirium is important predisposing patients [11]. Relying on importance of identifying cognitive impairment and difficult diagnosis of delirium after surgery this study, we aimed to investigate the prevalence of cognitive impairment and related factors (age, sex, weight, education level, occupation, addiction, history of previous surgery, type of surgery, type of anesthesia, duration of surgery) recovery room after surgery that people at risk of delirium after surgery to help predict and reduce its complications we have to recognize this disorder.

## 2. Materials and Methods

A descriptive study on 100 patients for 6 months for surgery and was admitted to hospital operating rooms of Khash.

Sampling was convenience and purposeful. Criteria for the selection of action and lack of alertness appeared before the underlying disease, heart disease, diabetes, epilepsy, sensory impairment (blindness and deafness), concussion and anti-seizure medications, antidepressants before surgery. The groups before surgery in operating room at time of acceptance interview included age, sex, weight, education level, history of previous surgery, addiction and was recorded in a questionnaire. After surgery, type of surgery and duration of anesthesia and surgery were recorded. Patients at moment of discharge (delivery ward) with regard to cognitive problems after surgery Neecham's confusion questionnaire examined the patient after surgery in the recovery room because it is still under influence of anesthesia may be so consult anesthesiologist decided at moment of departure from recovery in the cognitive state of patients with OBI. In fact, situation at the moment of delivery to the patient in terms of cognitive disorders have estimated. Neecham is fast delirium screening questionnaire tool and uninterrupted nurse at bedside can evaluate their behavior. This questionnaire has three main items include process (appearance, movement, speech with score of 10-0) and control physiological (vital signs, oxygen saturation urinary albumin with a score of 6-0). This questionnaire has a total of 30 points.

According to confusion of the questionnaire to assess individuals based on their overall score obtained by patients divided into 4 groups: normal subjects with scores of 30-27, 26-25 scores to dizziness, confusion (delirium) 24. Mild Banmrh 20, moderate to severe delirium with score of 19-0. This questionnaire is made according to DSM-III criteria 10-8 minutes is time to fill it in recent years due to activities of 24 nurses according to patients' daily activities observations made. Rompaey in 2007 CAM-ICU compare the questionnaire and non-intubated patients admitted to ICU on 172 Neecham did and came to e conclusion that Neecham better than the CAM-ICU can identify delirium and excellence benefits the classification of the level confused patient. In this study, Neecham with 87% specificity was 95%. Since incidence of postoperative delirium increased length of hospitalization, increased morbidity after surgery and so early detection of delirium by nurses to prevent it and as to be considered an important matter. Jannati and Sohrabi's study in Iran delirium was determined as diagnostic tool. Among these tools (Nu-DESC, DOES, CTD, DSI, ICDSC, Neecham, CAM-ICU, CAM) CAM-ICU and Neecham's questionnaire for critically ill patients in hospital and has higher sensitivity and specificity are used: Neecham's questionnaire and easily by nurse at bedside can be used during daily activities even earlier can identify patients susceptible [12].

In this study, Matsushita and his colleagues in 2004 to assess delirium after surgery by Neecham's questionnaires on 64 patients hospitalized in the surgery took place, concluded that because of the ability of the questionnaire ranking the level confused patients and identify early those at risk the risk, they will be able to identify and predict these individuals the incidence of delirium and reduce negative effects caused by it [13]. The collected data analyzed using descriptive statistics (t-test and ANOVA) were analyzed by software SPSS 16.

## 3. Results

The results showed that of the 100 patients, 56 males and 44 females with an mean age of 38 were unemployed 52.9% of the subjects, 43% were illiterate and 20.2% of addiction (Table 1). More action conducted in subjects with memory (30%) with general anesthesia (48%). The average length of surgery was 54 minutes.

Neecham's questionnaire classify them according to instructions confused people put into four groups of 30 score is the sum of all four levels. People who gain score of 30-27 consciousness (normal cognitive impairment), relatively confusing score 26-25, mild dizziness 24-20 score, severe dizziness 19-0 score (delirium) [14]. The results of this study, %age of people with mild dizziness, severe dizziness % (delirium) were confused and 25% were sober (Table 2).

Results of independent t-test and ANOVA was used to

**Table 1.** Demographic characteristics-frequency and percentage of subjects.

Demographic variables		number	Percentage
gender	Man	56	8.53
	Woman	44	3.42
age	Under 10 years	26	25
	11 to 30 years	22	2.21
	31 to 60 years	26	25
	Over 60 years	26	25
education	Illiterate	45	3.43
	Literate	55	9.52
job	Employee	11	6.10
	Worker	4	8.3
	Non-governmental	30	8.28
	Unemployed	55	9.52
History of addiction	Has	21	2.20
	Does not have	79	76
History of job's experience	Has	29	9.27
	Does not have	71	3.68

**Table 2.** Prevalence of cognitive impairment in patients.

Disorder	Number	Percentage
Severe dizziness		
Mild dizziness		
Rather confusing		
Conscious	22	25

compare mean scores of cognitive impairment (total score: 30) in terms of demographic characteristics showed significant relationship between cognitive impairment with age, education, occupation and there is history of addiction( $p>0.05$ ) and between the cognitive impairment associated with sex, and history of significant action was not found (Table 3).

Results Table 4 showed that the incidence of cognitive impairment by type of surgery, anesthesia and operation time there was significant relationship.

According to results listed 28% of people in the study suffered from severe dizziness, delirium were suspicious. Age over 60 years, history of addiction and orthopedic surgery and random laparotomy (EMS) and Tiran eaten more than an hour under general anesthesia led to patients at risk of severe dizziness after surgery aged under 10 years (probably because of fear and separation from parents), and the lack of decent jobs Education least be mild confusion.

**4. Discussion**

According to results obtained in this study, frequency of severe confusion (delirium suspect) is 28.8%. That is nearly studies. According to the study

delirium (severe dizziness) was observed in 30.6% of patients, our results are about same [15]. Cross-sectional study on 75 patients after surgery brook general surgery hospital of Gorgan in recovery room nursing delirium Nu-DESC was performed by using standard data analysis using descriptive statistics and chi-square and t test were analyzed and the results are as follows delirium was observed in 30.6% of patients and 3.9% of the 21.3% in orthopedic surgery in general surgery patients and male patients, the elderly, orthopedic surgery are more vulnerable. So common assessment of delirium in the recovery room may help to identify patients with delirium and was appropriate nursing care of patients after surgery. According to the results, Fearon et al. [15] found that our results are similar to surgical practice, including variable age in Atopdi's study claiming that caused severe cognitive impairment. In this study the relationship between sex and the disorders, unlike the study stream and colleagues showed that there was no recognition. In study of prevalence of cognitive impairment in various surgical procedures, from 361 cases studied, 22.2% reported in the actions of peripheral vascular delirium [16]. Litaker's study about risk factors for delirium after surgery on 500 patients admitted for elective surgery, 75 cases of delirium (11.4%) reported that higher age limit of 75 more function before surgery, a history of delirium, alcohol, consumption of opioid analgesics was reported to reception as well as risk factors [17] that prevalence of delirium in Litaker to study wide margin, this is probably different because of type of research which Litaker only elective surgery chosen if study is broader research community there and laparotomy emergency and orthopedic that results of this study, the frequency of cognitive impairment were included in study. Age and addiction in Litaker study and the study of delirium known as strata study, Morimoto, 25% of elderly patients who had undergone abdominal surgery were diagnosed with delirium [18], in descriptive study, Jannati et al. [12], the incidence of delirium in recovery room after surgery, 45% and 36% in the recovery room delirium, delirium after surgery predicted( $P< 0.001$ ) Sharma, et al. study on the verge of an observer evaluate the effect of intervention in prevention of delirium in patients with postoperative multi-cardiac surgery [19], showed that primary prevention of delirium, it will be probably the most effective treatment method [20]. According to results of above studies frequency of cognitive impairment and the factors influencing them (resonator) high age and history of drug addiction Education least major surgery practice with results of this study are very similar method of anesthesia and surgery increase duration of study risk of cognitive impairment in patients after surgery is greater.

Anwer showed that general anesthesia with an increase in the risk of early cognitive impairment

**Table 3.** Incidence of cognitive disorders in terms of demographic variables.

Demographic variables		number	The mean score of cognitive impairment (total score: 30)	Test results
gender	Man	56	216	t =2.1 Pvalue2.0=
	Woman	44		
age	Under 10 years	26	216	F=6.5 Pvalue <005.0
	11 to 30 years	22		
	31 to 60 years	52		
education	Over 60 years	26		t =5.2 Pvalue <01.0
	Illiterate	45		
job	Literate	55		F=4.4 Pvalue <005.0
	Employee	11		
History of addiction	Worker	4		t =3.3- Pvalue <001.0
	Non-governmental	30		
History of operation	Unemployed	55		t =07.0- Pvalue9.0=
	Has	21		
	Does not have	79		

**Table 4.** Incidence of cognitive impairment depending on the type of surgery and anesthesia and operation time.

Additional variables after surgery		The mean score of cognitive impairment (total score: 30)	SD	Test results
Type of operation	Orthopedic	19	3.9	F=1.10 P value <005.0
	General (appendicitis, hernia)			
	Caesarean section			
	Laparotomy shot (EMS)			
	Random laparotomy (EMS)			
Type of anesthesia	Public			F=1.41 P value <005.0
	Spinal			
	The Local	7		
Duration of operation	Less than 1 hour			t =5.4- P value <005.0
	More than an hour			

in elderly patients is associated [21]. The approved study in 30 elderly patients undergoing laparotomy active in Echigoya's study, no significant differences was observed between patients with and without postoperative delirium and the duration of anesthesia [22].

**5. Conclusion**

According to the results obtained in this study, 28% of people experiencing severe dizziness were suspected of delirium. As well as people over 60 years, history of addiction, orthopedic surgery and

random laparotomy (EMS) and shot with general anesthesia over an hour and exposed to extreme confusion after surgery are more vulnerable and should be more patient in their care sector. Therefore, consultation by anesthesiologist before surgery and patients are evaluating cognitive disorders and delirium patients who undergo surgery are susceptible can recognize, treat and even prevent delirium in hospitalized.

## References

- [1] Sadock BJ, Sadock VA. (2008). Kaplan & Sadock's concise textbook of clinical psychiatry. Lippincott Williams & Wilkins.
- [2] Salarvand S, Pournia Y. (2009). Changes in cognitive and functional status of the hospitalized elderly and their related factors: a cross-sectional study. *ME-JAA*. **6**: 34-45.
- [3] George C, Nair JS, Ebenezer JA, et al. (2011). Validation of the Intensive Care Delirium Screening Checklist in nonintubated intensive care unit patients in a resource-poor medical intensive care setting in South India. *Journal of critical care*. **26**: 138-143.
- [4] Ghana S, Saeedi S, Sanagoo A. (2012). The Incidence of Delirium in Patients After Surgery in Recovery Room. *Jorjani*. 23-29.
- [5] Crippen DW. (1994). Neurologic monitoring in the intensive care unit. New horizons. Baltimore. USA. **2**: 107-120.
- [6] Mouchoux C, Fassier T, Rippert P, et al. (2015). Nursing Staff Knowledge on Postoperative Delirium in Older Inpatients: An Exploratory Survey. *Adv Practice Nurs*. **1**: 102.
- [7] Deiner S, Silverstein JH. (2009). Postoperative delirium and cognitive dysfunction. *British journal of anaesthesia*. **103**: i41-i46.
- [8] Bilotta F, Doronzio A, Stazi E, et al. (2011). Early postoperative cognitive dysfunction and postoperative delirium after anaesthesia with various hypnotics: study protocol for a randomized controlled trial-The PINOCCHIO trial. *Trials*, **12**: 170.
- [9] Uguz F, Kayrak M, Çiçek E, et al. (2010). Delirium following acute myocardial infarction: incidence, clinical profiles, and predictors. *Perspectives in psychiatric care*. **46**: 135-142.
- [10] Agnoletti V, Ansaloni L, Catena F, et al. (2005). Postoperative delirium after elective and emergency surgery: analysis and checking of risk factors. A study protocol. *BMC surgery*. **5**: 1-18.
- [11] Naughton BJ, Saltzman S, Ramadan F, et al. (2005). A multifactorial intervention to reduce prevalence of delirium and shorten hospital length of stay. *Journal of the American Geriatrics Society*. **53**: 18-23.
- [12] Jannati Y, Bagheri NM, Sohrabi M, et al. (2013). Incidence of Delirium And Associated Factors Before Open Heart Surgery.
- [13] Matsushita T, Matsushima E, Maruyama M. (2004). Early detection of postoperative delirium and confusion in a surgical ward using the NEECHAM confusion scale. *General hospital psychiatry*, **26**: 158-163.
- [14] Vreeswijk R, Timmers JF, de Jonghe JF, et al. (2009). Assessment scales for delirium. *Aging Health*. **5**: 409-425.
- [15] Fearon KCH, Ljungqvist O, Von Meyenfeldt M, et al. (2005). Enhanced recovery after surgery: a consensus review of clinical care for patients undergoing colonic resection. *Clinical nutrition*. **24**: 466-477.
- [16] Eriksson M, Samuelsson E, Gustafson Y, et al. (2002). Delirium after coronary bypass surgery evaluated by the organic brain syndrome protocol. *Scandinavian Cardiovascular Journal*. **36**: 250-255.
- [17] Litaker D, Locala J, Franco K, et al. (2001). Preoperative risk factors for postoperative delirium. *General hospital psychiatry*. **23**: 84-89.
- [18] Morimoto Y, Yoshimura M, Utada K, et al. (2009). Prediction of postoperative delirium after abdominal surgery in the elderly. *Journal of anaesthesia*. **23**: 51-56.
- [19] Sharma PT, Sieber FE, Zakriya KJ, et al. (2005). Recovery room delirium predicts postoperative delirium after hip-fracture repair. *Anesthesia and Analgesia*. **101**: 1215-1220.
- [20] Nazeri AA, Khajeh MN, Pak SS, et al. (2007). The Effect of Multi-Component Intervention for Prevention of Post-Open-Heart Surgery Delirium.
- [21] Anwer HM, Swelem SE, El-Sheshai ADEL, et al. (2006). Postoperative cognitive dysfunction in adult and elderly patients. *Middle East J Anesth*. **18**: 1123-1138.
- [22] Echigoya Y, Kato H. (2007). Causes of postoperative delirium after abdominal surgery in elderly patients. Masui. *The Japanese journal of anesthesiology*. **56**: 932-936.