ORIGINAL ARTICLE

Post Operative Delirium (POD) in Surgical Patients at PMCH Nawabshah

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ABSTRACT

Objective: To determine the prevalence of postoperative delirium in surgical patients.

Methods: A cross-sectional study conducted in surgical department of Peoples Medical College Hospital and Surgical Intensive Care Unit (SICU), on 90 patients in 3 years from May 2013 to April 2016. Patients presented with features of unaware to surroundings, diminished memory, not fully oriented by time, place and person, unable to name objects, write or present with rambling speech and perceptional disturbances. These were treated conservatively by seeking help from psychiatrist also.

Results: In total 90 patients in three years of 60 years developed this disease after emergency surgical procedures and their complications where as only 30 patients were of elective list. Females were more commonly affected as compared to males. Old age patients were the common victims. 30 (50%) patients out of 60 emergency cases developed the disease due to fecal fistula and stoma formation. 12 (40%) patients of elective list developed the disease due to infected wound after Onlay and Sublay mesh repair.

Conclusion: Medical treatment is the best choice with help of psychiatrist. Preoperative assessment by anesthetist is must to rule out its risk factors like dementia etc.

Key words: Postoperative delirium, rambling speech, perceptional disturbance.

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INTRODUCTION:

Delirium is defined as an acute disorder of attention and cognition. POD is the delirium that presents in individuals following surgery[1].POD most commonly occurs in old age patients but rarely affects critically ill young individuals. It is a serious health problem. It is associated with poor postoperative results, prolonged hospital stay, increased complications, poor recovery and increase in expenses of patients. In surgical practice, mostly the disease results from the complications of abdominal surgeries either emergency or elective. The procedures like appendectomy, open/lap cholecystectomy, exploratory laparotomy, wound dehiscence, stoma formation, and infected wound of abdominal mesh repair enormously contribute to cause this disease. Rates of postoperative delirium in pts who have abdominal surgery range from 17 to 51%.

The incidence of POD ranges from 9% to 87% depending on both the patient population and the degree of operative stress POD ranges from 4.4% in pts undergoing cataract surgery, in Israel to 56% among elderly pts. Patients of preoperative risk of delirium affecting 28% of surgical pts in ICU postoperatively.[2]

According to the Roman Philologist Marcus Terentius (116B.C-27 B.C) in De Lingua Latina, "Dilirium" is the term taken from Latin language used for agricultural activity of ploughing. It literally means "going off the ploughed Track". In medical field, it was first time used by Aulus Cornelius Celsus (25 B.C-50 B.C) in his work "De Medicinia".

The risk factors can be classified into three categories viz pre operative, per operative, and

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postoperative. Preoperatively, if a patient has dementia unfamiliar surroundings and sensory deprivation there are higher chances of developing POD postoperatively. Per operative important factors include general anesthesia, decreased perfusion to brain, hemodynamic instability and high stress procedures can cause POD. While postoperatively, old age, poly pharmacy, and electrolyte and glucose imbalances, narcotics, sleep disturbance, continuous unrelieved pain and major wound infections also cause this disease.

There are two types of POD. One is hyperactive delirium in which a patient is restless, Irritable, combative or agitated. It is rare type. Another type is hypoactive that presents with lethargy, decreased alertness or awareness. This type occurs in 71% patients. Third is mixed type consists of features of both types and its incidence is 29%.[3]

Drug induced POD is common. Drugs that promote central anticholinergic activity are the most common culprits. Commonly used medications in postoperative period which cause delirium include Cimetidine corticosteroids diphenhydramine belladonna promethazone warfarin narcotics benzodiazepines and antiparkinson;s disease. These drugs should be avoided postopertively. The aging brain is the most susceptible to developing delirium which exposed to anesthetic agents; the most common drugs which result in delirium are benzodiazepines morphine and anticholinergic[4].

Clinical features of POD include decreased awareness to surroundings, ill-attentive diminished memory, not fully oriented time, place and person. The language problem is so acute and severe that patient can not even tell the name of objects inability to write and also rambling speech. Problem of perception is also found as pt misinterprets and hallucinates[5,6]

Blood work to help in diagnosis includes electrolytes glucose arterial blood gas calcium phosphate magnesium. Evaluation of infection is necessary postoperatively. Urosepsis and pnomomnia apart from blood cultures should also be sorted out. CT scan is advised only when neurological deficits are found on physical examination suggesting stroke. The diagnosis is made by Confusional Assesment Method Intensive Care Unit (CAM-ICU). Minimal Mental State Examination (MMSE) is another tool to diagnose the disease. It measures the orientation attention recall and language. Other bed side tests include clock drawing task.[7]

Treatment includes multi component strategy. Delirium prevention should start in OT by maintaining hematological stability providing adequate oxygenation minimizing electrolyte disturbances and administering appropriate drug dosage during operation. Give pt repeated orientation to surroundings and care member team uninterrupted night time sleep early mobilization vision protocol and hearing protocol. Specicific care should be taken to avoid dehydration or hypovolemia. Nonessential catheters such as folley;s NG tubes or multiple I/V lines should be avoided. Family members should be encouraged to interact with delirious pt. pharmocolgical treatment includes neuroleptic agents particularly haloperidol are drug of choice. Antipsychotic noablyrespiridone is also given.[4,6,7]

The objective of this study is to prevent the occurrence of POD in surgical patients especially old age one by treating the causative agents avoiding medications causing the disease and comprehensive assessment of anesthetist to sort out and treat the risk factor preoperatively.

METHODS:

A cross-sectional study conducted in surgical department of Peoples Medical College Hospital and Surgical Intensive Care Unit (SICU). on 90 patients in 3 years from May 2013 to April 2016. All the patients were already admitted in wards with prolonged stay there.

All the patients suffering from postoperative delirium were observed and analyzed clinically. History and thorough clinical examination was done of all patients with positive findings on examination.

All the patients were already admitted through the outdoor patient department (O.P.D) or casualty (emergency) department. Diagnosis was made on history and clinical examination. Patients presented with features of unaware of to atmosphere, lessened memory, partially oriented to time, place and person, non recognition of objects, write or present with rambling speech and perceptional disturbances. All the variable were entered and analyzed by SPSS software.

RESULTS:

This is a cross-sectional study conduted on

90 patients in 3 years from May 2013 to April 2016. Out of total 90 pts, 70 (77.7%) were females and 20 (22.2%) males. Out of 70, 55 females were of age above 50 years and only 15 were less than 50 years age. 20 males were affected. Out of them 15 were old age and 5 were young. All the patients were divided into two groups A-Elective and B-Emergency. Elective patients were 30 (33%) and emergency patients were 60 (66%). Elective pts included 13 (43.33%) pts of Onlay/Sublay mesh repair, 6 (20%) of right hemicolectomy of RIF mass, 5 (16.66%) pts of inguinal hernia mesh infected wound, 4(13.33%) pts of urinary fistula 2(6.66%) pts developed urinary incontinence after TVP, Emergency surgery included 15 (25%) pts of fecal fistula, 15 (25%) pts of stoma formation (Ileostomy/ colostomy), 10(16.66%) pts of burst abdomen,

S.No	Elective	No of Cases	Percentage	Emergency	No of Cases	Percentage
1	Onlay Sublay mesh repair	13	43.33	Fecal fistula	15	25%
2	Right hemicolectomy	6	20	Stomas formation	15	25
3	Infected inguinal hernioplasty	5	16.66	Burst abdomen	10	16.66
4	Urinary fistula	4	13.33	Rexploratory laparotomy	10	16.66
5	Urinary incontinence	2	6.66	Billary fistula	6	10
6				Post-op paralytic illaus	2	3.33
7				Liver trauma with billiary fistula	2	3.33
Total		30	100	Total	60	100

10(16.66%)pts of re-exploratory laparotomy, 6(8.33%)pts of billiary fistula after cholecystectomy and 2(3.33%)pts of postoperative paralytic illeus, 2(3.33%)pts of liver trauma forming postoperative billiary fistula.

In our study, females were common victims as compared to males. Age difference was also present. Old age pts were affected more as compared to adults.

After making diagnosis pts were given Haloperidol administered orally Intra Venous and Intra Muscularly. The initial dose of 1 to 2 mg with doses of 0.25 to 0.5 mg every 4 hours for maintenance dose in elderly pts. Those pts with persistent agitation higher doses of drug was given. Those pts shifted to ICU a loading dose of 2 mg of I/V haloperidol was administered with repeated doses of every 15 to 20 minutes while agitation persists. When delirium was controlled scheduled drug was prescribed over next few days to avoid relapses of severe agitation.

DISCUSSION:

Delirium is a complicated disease whose pathophysiology is still not fully understood. But the studies described that there is an imbalance of neurotransmitters. Decrease in release of Acetyl Choline (Ach) and increase release of dopamine are deemed to be responsible for developing this fatal illness.[8]

POD in surgical patients is usually the result of pro inflammatory cascade resulting in brain edema and hypo perfusion. This change persistent agitation higher doses of drug was given. Those pts shifted to ICU a loading dose of causes the formation of gaseous fat or lipid cerebral micro emboli causing the acute and prolonged cognitive dysfunction. Various studies have been done on use of dexamethasone and statins in order to prevent increasing incidence of POD in surgical pts. These both drugs are chosen for study because of their anti-inflammatory antithrombotic properties.[9]

A prospective cohort study of 111 patients by J.W.Roates published in international journal of surgery in 2015 showed similarity of incidence of

POD in emergency conditions as compared to elective one. Wang et al was the biggest well designed clinical trial that found reduction of POD with helaporadol but it requires constant monitoring by nurses.[10] Dexamethasone study showed significant reduction of POD compared to Placebo. Help was also sought from psychiatrist to treat the POD but the surgical problem was dealt with by surgeons. Anesthetist was also involved to decrease the incidence of POD by getting assessment of patients preoperatively.[11,12]

CONCLUSION:

The incidence of POD is high in elderly patients for emergency as well as elective conditions leading to enhancement of hospital stay cost and post operative mortality rate. To lessen its incidence it is essential that preoperative risk factors and causative agents must be dealt with. Despite this preoperative step if patient still develops POD, the cause should be found out to treat the disease as soon as possible.

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