

Study of the Factors Correlated with unrecognizing Delirium Cases by Non Psychiatrist Physicians

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Background: Delirium is increasingly being recognized as an important risk factor for adverse out-comes with critical illness, it may be passed unnoticed by non psychiatrist physicians. We investigated the factors correlated with unrecognizing delirium cases by non psy-chiatrist in 155 cases referred for psychiatric consultation for different reasons which were found to meet criteria for Delirium according to DSM-IV TR delirium criteria and Confusion Assessment Method (CAM).

Aim: We investigated the factors correlated with unrecognizing delirium cases by non psychiatrist.

Subjects & Methods: 155 cases referred for psychiatric consultation for different reasons which were found to meet criteria for Delirium according to DSM-IV TR delirium criteria and Confusion Assessment Method (CAM).

Results: 2.8% of total admitted patients were referred to psychiatric consultation. There is about 54.8% of 155 confirmed delirium diagnosis cases were unrecognizing by non psychiatrist. Surgical physicians having more unrecognizing referral than ICU and medical physicians,

(41.1%, 15.4%, 34.1%). Past history of bipolar disorder or psychosis, substance abuse/alcohol, and depression are marginally significant higher in unrecognized group, (14.1%, 26.8%, 43.5%) than the unrecognized group. Length of hospital stay, gender, marital status, and duration before consultation were not significantly different in both group. The reason of referral was 17.4% for abnormal behavior, 11.6% for depression, 9.6% for substance abuse/alcohol problems, 7.7% to continue the previous psychiatric medications, 45.15% for delirium / delirium synonymous symptoms, 17% for dementia.

Conclusion: Past history of psychiatric illnesses may conceive the referral physician to recognized delirium. Surgical physicians may miss the diagnosis of delirium than other medical physicians. Preconceptions of delirium are common only in older persons may also be associated with missed delirium diagnosis. Thus delirium identification can be enhanced by improving knowledge and skills of medical and surgical physicians about delirium, and by using simple screening instrument such as Confusion Assessment Method, (CAM).

Keywords: Delirium, CAM, Unrecognized delirium, psychiatric consultation referral.

Abbreviations:

DSM IV TR: Diagnostic Statistical Manual Version IV Text revision

APA: American Psychiatric Association

CAM: confusion Assessment Method

ICU: Intensive Care Unit.

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INTRODUCTION

Delirium is a disorder characterized by disturbance of consciousness, with reduced capacity to sustain attention, disorientation, perception, psychomotor behavior, sleep-wake cycle and memory or language disturbance. It is usually transient in nature and typically develops within hours-to-days, and risk factors for delirium include severity of illness, older age, and baseline dementia, (Francis and Kapoor, 1992; Rockwood, 1993 and Armstrong, et al. 1997). Research indicates that early identification and intervention can help to limit any negative.

adverse events. There are three types of delirium:

- Hyperactive type.
- Hypoactive type.
- Mixed subtype, (Stawicki and Gerlach, 2008). Increasing knowledge and awareness of early detection and efficient management of delirium is the first step toward prevention, (Ski and O'Connell, 2006).

Delirium are caused by a lot of etiological factors which include medication, infection, trauma, metabolic and cardiovascular disturbances, (APA, 1999). Delirium is a common disorder in medical and surgical inpatients. Delirium has been difficult to define especially because of its variety of causes and variety of terms used such as ICU psychosis and metabolic encephalopathy (Hales, et al. 2008) Previous researches estimated 10%–41% of inpatients have delirium during their hospital stay, (Farrell and Ganzini, 1995; Manos and Wu, 1997 and Lawlor, et al. 2000). Acutely ill geriatric populations developed delirium in 10% to 61% during their hospitalization, (Francis and Kapoor, 1992; Rockwood, 1993 and Armstrong, et al. 1997).

Delirium is typically an indicator of a physical pathology and a worsening prognosis, (Wise and Brandt, 1992; Haller and Binder, 1992 and Dubos, et al. 1996). Delirium can be difficult to identify because of its transient nature and varied presentation hypoactivity, hyperactivity, or

both especially when it's superimposed on dementia or depression, (Inouye, 2006), and fluctuating nature of the symptoms, (Zou, et al. 1998 and Inouye, 2006). the concomitance of etiologic factors, may induce confusion and complicate diagnosis, (Inouye and Charpentier 1996 and Rockwood, 1993).

Armstrong, et al. (1997) found that 46% of patients with delirium were undetected by the referring physician, Margolis, (1994) found that 37% of patients referred to the psychiatry consultation for depression were found to have delirium. Meagher and Trzepacz, (2000), reported that detection of delirium is lower in older patients, especially with depression or dementia, and in hypoactive delirium, Farrell and Ganzini, (1995) study found that 42% of patients referred for depression showed symptoms of delirium. It was reported that physician on the general-medical wards were more accurate than surgical physician in relation to delirium recognition, (Margolis, 1994; Berkowitz, 1981 and Agbayewa, 1983) reported that medical and surgical physician had poor knowledge about organic brain syndromes, with surgeons ranking lower than other medical physician. Delays in diagnosis may be caused by clinicians, unfamiliarity with signs and symptoms of delirium, the absence of formal assessment protocols, the clinicians not considering delirium to be a significant diagnosis, and the condition's fluctuating nature, (Pae, et al. 2008).

Under recognition of delirium may increase morbidity, mortality, longer hospital stays, and increased healthcare costs, (Agbayewa, 1983; Trzepacz, et al. 1985 and Inouye, et al. 2001). Patients with inaccurate delirium diagnoses have increase in mortality in about 10% and 65% (Rockwood, 1993), longer hospital stays, (Schor, et al. 1992), and increase rates of institutionalization, rehabilitation, and home care, Inouye, et al. (2001) and Weddington, (1982) found that up to 25% of patients with delirium die within 6 months of discharge from the hospital. Francis and Kapoor, (1992) reported increased 2-year mortality, increased loss of independent living, and decreased cognitive performance in elderly patients with delirium.

Aim of the study: This study concerned with investigating the factors correlated with unrecognized delirium by non psychiatrist physicians.

METHOD

Study sample:

All referrals from other specialties for psychiatric consultation at Rashid Hospital between December 2005 – December 2006 with age more than 16 years were included in this study. About 435 patients from

15535 total admissions during this periods, (2.8%) were referred for psychiatric consultation. 155 cases were diagnosed delirium (By the author) according to DSM IV delirium criteria, (DSM, 2000). The delirium diagnosis of 155 cases was confirmed by the authors with a Confusion Assessment Method for delirium (CAM), (Inouye, et al. 1990) .

The CAM four components are used to determine the presence or absence of delirium:

1. **Acute onset or fluctuating course** Usually obtained from a family member or a nurse and is supported by positive answers to the following questions:
 - Is there an acute change from the patient's baseline?
 - Did the abnormal behavior fluctuate during the day?
2. **Inattention** Demonstrated by a positive answer to these questions:
 - Did the patient have difficulty focusing attention?
 - Was the patient easily distractable?
 - Was it difficult for the patient to keep track of what was being said?
3. **Disorganized thinking** Supported by a positive response to the following questions:
 - Was the patient's thinking incoherent (i.e., rambling, irrelevant conversation, unclear or illogical flow of ideas)?
 - Was the patient switching from subject to subject unpredictably?
4. **Altered level of consciousness** Demonstrated by the absence of the answer "Alert" to the following question. Do you rate this patient's overall level of consciousness as:
 - Alert – normal.
 - Vigilant – hyperalert.
 - Lethargic – drowsy, easily aroused.
 - Stuporous difficult to arouse.
 - Comatose – unarousable? The diagnosis of delirium as determined by CAM requires the presence of 1 and 2, and the presence of either 3 or 4, (Inouye, et al. 1990). The CAM has been validated in a number of clinical settings, including the emergency department, the geriatric ward, and the postanesthesia care unit. Reported sensitivities (0.86) and specificities (0.84).

The following data for each referred patient: demographic characteristics, dates of admission and discharge, sources of referral; (Medical and medical subspecialties which include general medical wards, cardiology, neurology, endocrinology, chest, and infection unit, Surgical and surgical subspecialties which include general surgical wards, neurosurgery,

trauma, and orthopedics, cardiothorathic), medical and surgical ICU, and others which include Obs/Gyn, oncology, reason for referral, past history of psychiatric illness, medication used to management delirium, were obtained .

All confirmed delirium cases by the psychiatric consultation team were divided into "Recognized diagnosis, if the referring physician was using the word". Delirium or any synonym for delirium was used as described by (Wise and Brandt, 1992). Versus "Unrecognized diagnosis". If the patient who met DSM-IV TR criteria for delirium was referred with a different diagnosis by the referring physician. The study was approved by the ethical committee Board at Rashid Hospital.

Statistical analysis:

Statistical analysis was computed with SPSS package 12. Mean-difference ttests and Pearson chi-square statistics, (p value is significant at <0.05).

RESULT

Table (1) Demographic and patients characteristic:

Rate of psychiatric consultations is 2.8% (345/15535) of admitted patients, 35.6% of them were diagnosed delirium. The mean age of the studied patients is (48.72±23.43) years. 72% were male and 28% were female, 35.4% married, 41.4% single, and 23.2% others (Widow, divorced, separated). 37.4% were referred from medical specialties, 23.9% from surgical specialties, 29.1% from ICU, and 9.6% from others (Anesthesia, rehabilitation, Obs/Gyn). As regard reason of referral it was found that 17.4% for abnormal behavior, 11.7% for depression, 7.1% for substance abuse/alcohol problems, 4.5% to continue the previous psychiatric medications, 45.2% for delirium/delirium synonymous symptoms, 10.9% for dementia, and 3.2% for others (Competency, clearance from medical side, preoperative evaluation). Underlying etiologies were found as follow 18.7% with infection, 28.4% with trauma, 21.9% after surgical procedures, 8.4% with hepatic disease, 9.6% with endocrinological disorders, 7.8% neoplasm, and 5.2% with epilepsy. About 43.8% received haloperidol, 47.1% receiving benzodiazepine, 9.1% with others (Olanzapine, antidepressant, mood stabilizers).

Table 1: Demographic and patients characteristics:

Variable	No	%
Total referral patients	435/15,535	2.8%
Patient with delirium No &% (CAM components)	155/435	35.6%
Age (Mean (48.72±23.43)		
16-45years	49	31.6%
45-60 years	65	41.9%
>60years	41	26.5%
Sex		
Male	111	72%
Female	44	28%
Marital status		
Married	55	35.4%
Single	64	41.4%
Others ^a	36	23.2%
Specialty referring		
Medical specialties	58	37.4%
Surgical specialties	37	23.9%
ICU	45	29.1%
Others ^b	15	9.6%
Reason of consultation		
Agitation/abnormal behavior	27	17.4%
Depression	18	11.7%
Substance abuse/alcohol	11	7.1%
known case of psychiatry to cont. Medication	7	4.5%
Delirium synonymous symptoms [*]	70	45.2%
Dementia	17	10.9%
Others ^c	5	3.2%
Medical disease		
Infectious disease	29	18.7%
posttraumatic	44	28.4%
postoperative	34	21.9%
Hepatic disease	13	8.4%
Endocrinological disease	15	9.6%
Neoplasm	12	7.8%
Others ^d	8	5.2%
Medication		
Haloperidol	68	43.8%
Benzodiazepine	73	47.1%
Others ^e	14	9.1%

a: divorced, widow, separated: anesthesia, obs/Gyn, **rehabilitation:** clearance from medical, competency. **d:** epilepsy. **e:** antidepressant, mood stabilizers. *****: delirium synonymous symptoms: Acute confusional state, acute brain failure, acute brain syndrome, ICU psychosis, encephalopathy, mental status changes.

Table (2) factors correlated with unrecognized delirium:

There is about 54.8% of cases were unrecognized. 43.5% of for psychiatric consultation them with past history of depression; 26.8% had previous diagnoses of substanceuse disorders; and 14.1% were found to have a past history of psychosis or bipolar disorder. It was shown that younger patients with delirium were more likely to be unrecognized ($p<0.05$). surgical

specialties having more improper referral than medical specialties physician. The presence of a past psychiatric history (Depression, substance abuse/ alcohol, and bipolar/psychosis) was not significantly different between 2 groups, but statistically it was high specially with history of bipolar disorder or psychosis, and depression ($p=0.06, 0.64$). Length of hospital stay, gender, marital status, and duration before consultation were not significantly different.

Table 2: factors correlated with unrecognized delirium:

Variable Total NO.155	Recognized diagno-sis		Unrecognized diagnosis		P value
	NO.(70)	45.2%	NO.(85)	54.8%	
Age (Mean±SD)	56.8±14.7		47±12.7		T(97)=2.85
male	46	65.7%	48	56.4%	X ² =0.039
Female	24	34.3%	33	38.8%	X ² =1.19
Medical specialty	28	40.0%	29	34.1%	X ² =0.96
Surgical specialty	19	27.2%	23	41.1%	X ² =3.31
ICU	16	22.8%	13	15.4%	X ² =1.27
Other referral	7	10.0%	8	9.4%	X ² =1.34
Past psychiatric history:					
Depression	22	31.4%	37	43.5%	X ² =2.38
Substance abuse/alcohol	24	34.2%	31	26.8%	X ² =1.39
Bipolar/psychosis	5	7.1%	12	14.1%	X ² =2.68

*P value significant

DISCUSSION

Delirium is a condition that may be passed unnoticed by non psychiatrist physicians, and yet has devastating consequences on the patient medical condition. The results of our study found that the prevalence of unrecognized delirium is 54.8% compared to 46% reported by (Armstrong, et al. 1997), and 31% by (Inouye, et al. 2001).

younger age patients with delirium were more unrecognized in our study than older age ($p=0.05$), and this finding is agree with Swigart, et al. (2008) finding which could return to less perceiving the prevalent of the delirium condition in younger patients with the treating physician. and disagree with (Inouye, 2006), and can be explained with the different sample characteristic as most of our sample age is less than 60 years old, but Inouye sample is mostly among older age.

The male and female patients were inaccurately diagnosed in about (56.4%, 38.8%), and this finding is not in accordance with Swigart, et al. (2008) results as it was equally misdiagnosed, but (Armstrong, et al. 1997) found that female is more misdiagnosed than male specially with depression and this discrepancy might be due to different sample size as male represent about 72% of our sample.

Surgical physicians recognized delirium less than medical physicians, (41.1% versus 34.1%) and this finding is going with (Margolis, 1994; Berkowitz, 1981; Agbayewa, 1983 and Armstrong, et al. 1997) findings, which could be stem from increase the medical staff awareness about delirium, as they trained their staff about psychiatric emergency developed in medical inpatients specially delirium, also the medical physician spent more time with the patients than the surgeon which may increase the likelihood of an accurate referral diagnosis, (Swigart, et al. 2008).

Unrecognized delirium in ICU is 15.4% which is less than what Armstrong, et al. (1997) found in their study sample that ICU misdiagnosis is more than medical ward, and they explain that by possibility that the ICU staff are so frequently exposed to delirious patients and therefore they miss the diagnosis, but this explanation could be the contrary as they are more expert in detecting and deal with delirious patients. Our data revealed that the length of stay, the duration before consultation did not find significantly differentiate both group.

Patients with a history of psychiatric illness such as bipolar disorder, psychosis, depression, and substance abuse/alcohol were highly unrecognized

by non psychiatrist physicians, (14.1%, 43.5%, and 26.8% respectively). This results is going with Farrell and Ganzini, (1995), result which found diagnostic confusion, and, hence, misdiagnoses related to overlap between symptoms of depression and delirium (e.g., dysphoria) especially hypoactive type, as well as a patient's erratic behavior, often a sign of delirium, may be misattributed to past psychiatric conditions, thus precluding consideration of a delirium.

This study findings may not be generalized to other psychiatric consultation-liaison services as it evaluate only selected delirium patients. Future study about the referring physician factors is recommended regarding the training and psychiatric knowledge background.

CONCLUSIONS

Delirium is a condition that is highly unrecognized, and yet has devastating consequences on the patient medical condition; it is an important risk factor for adverse outcome for critical illness. Past history of psychiatric illnesses may conceive the referral physician to recognized delirium. Surgical physicians may miss the diagnosis of delirium than other medical physicians. Preconceptions of delirium are common only in older persons may also be associated with missed delirium diagnosis. Thus delirium identification can be enhanced by improving knowledge and skills of medical and surgical physician about delirium, and by using simple screening instrument such as Confusion Assessment Method, (CAM).

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الملخص العربي

دراسة العوامل المرتبطة بعدم التعرف على حالات الهذيان من الأطباء غير النفسيين

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التخصصات الجراحية ذو نسبة عالية في التحويل الغير صحيح عن أطباء العناية المركزة وأطباء التخصصات الباطنية، (١,١٤١٪، ١٥,٤٪، ٢٦,٥٪). ووجد أن التاريخ المرضي لمرض ثنائي القطبية والذهان، الإكتئاب، وإساءة استعمال المخدرات/الكحول يرتبط بعدم التعرف على حالة الهذيان في (١,١٤١٪، ٤٣,٥٪، ٢٦,٨٪) من الحالات. لا يوجد دلالة إحصائية لطول مدة البقاء في المستشفى، ونوع الجنس والوضع العائلي، وطول المدة قبل طلب الاستشارة النفسية لا يختلف كثيرًا في كل مجموعة. وكان سبب الإحالة هو ١٧,٤٪ للسلوك الشاذ، ١١,٦٪ للإكتئاب، ٩,٦٪ لتعاطي المخدرات/مشاكل الكحول، ٧,٧٪ لمواصلة الأدوية للأمراض النفسية السابقة، ٤٥,٢٪ للهذيان ومرادفاته، ١٧٪ لأعراض الخوف.

تزداد أهمية حالة الهذيان كعامل خطر مهم لحدوث النتائج السلبية مع الأمراض الخطيرة، ومع ذلك يقل التعرف عليها من الأطباء الغير نفسيين.

الهدف من هذا البحث: بحث العوامل المرتبطة بعدم التعرف على حالة الهذيان من الأطباء الغير نفسيين. وجرى البحث على ١٥٥ حالة تم طلب الاستشارة النفسية لها لأسباب مختلفة ووجد ان تشخيصها حالة هذيان تبعاً لمعايير التشخيص الإحصائي الأمريكي الرابع وتم اثبات التشخيص بتقييم عام للهذيان.

نتائج البحث: وأظهرت النتائج أن تم طلب الاستشارة النفسية في ٢,٨٪ من المرضى الذين تم تنويمهم بالمستشفى، لم يتم التعرف على حالة الهذيان في ٥٤,٨٪ من ١٥٥ حالة الهذيان والمحولة للاستشارة النفسية لأسباب أخرى غير الهذيان. ووجد ان أطباء