DELIRIUM IN ACUTE PHASE AFTER STROKE: ANALYSIS OF A SAMPLE OF 100 PATIENTS ADMITTED IN STROKE UNITS OF SAN MARTINO HOSPITAL

M.T. Infante[1], M. Pardini[1], L. Malfatto[2], C. Finocchi[1], C. Serrati[2]

1- Department of Neurology, Ophtalmology, Genetics and Materno-Infantile Sciences, University of Genova

2- Department of Neurology, San Martino-IST IRCSS Hospital, Genova

ABSTRACT

Delirium is an acute confusional state characterized by sudden onset of change of attention or awareness, fluctuating course, due to a medical condition, use or withdrawal of substances, in patients without dementia. [1]
Delirium is often under recognized; diagnosis is made only in 25% of cases if a proper tool for diagnosis or screening is not used. The diagnosis is based in DSM V diagnostic criteria, but there are also several scales that can be utilized (CAM scale, CAM ICU for intensive care units, 4AT test etc). [2]

STUDY RATIONAL

Delirium is common during the acute phase after stroke; a limited number of studies reported incidence of delirium between 10 and 48%, depending on the different tool for diagnosis or screening. [3].
A recent study of delirium in the acute phase of stroke (in the first week of hospitalization) showed an incidence of delirium of 11,8 % if delirium is screened with CAM and the severity of delirium is assessed with DRS (Delirium Rating Scale). [4]
Other authors compared different types of test for cognitive screening and delirium screening in acute stroke setting unit showing **that 4AT is a reasonable choice for cognitive screening test and for delirium screening in the acute phase of stroke**, compared to Montreal Cognitive Assessment (MoCA). Clock Drawing Test (CDT) has also favorable properties at lower MoCA threshold, and may be useful for cognitive screening. [5]
Delirium in fact is supposed to be underestimated in the stroke units due to the lack of a valid specific tool for diagnosis.
The aim of this study is to demonstrate that delirium is underdiagnosed in the acute phase of stroke if we don't use a correct diagnostic tool or screening instrument.

PATIENTS AND METHODS

The study includes two phases: in the first phase we analyzed retrospectively 102 patients (age between 90 and 28 years old) admitted to the Stroke Units of San Martino Hospital in 2014. We evaluated the indirect reports of delirium from medical records, nursing reports, and discharge letters.
During the period between December 2014 and April 2015 we analyzed 100 new consecutive patients (of any age) admitted to Stroke Unit with diagnosis of stroke (ischemic or hemorrhagic stroke) during the first week of hospitalization. Patients with Glasgow coma scale (GCS) above 5 were excluded (as indicative of severe coma). Demographic data were collected (age, sex), in association with presence of diagnosis of dementia in accordance to DSM V criteria, lesion site, type of treatment, NIHSS score at admittance and at discharge, Rankin scale before the stroke and at discharge.
Delirium was evaluated with DSM V criteria, 4AT and CDT at admission (T0) and after 7 days (T1), and in case of further acute change.

RESULTS

In the retrospective study we founded a 5% of incidence of delirium, diagnosis made in accordance to best clinical practice and in 3 patients of them in accordance to DSM V criteria. The age of patients with delirium was between 75 and 86 years old; 4 patients had acute ischemic stroke, one patient had epidural hematoma. NIHSS score was between 4 and 13. (Grafico 1)).
In the prospective (second) phase of the study, **delirium was diagnosed in 52% of patients with 4AT** (40% at T0, 37% at T1) – Grafico 2, **in 32% of patients with DSM criteria** (32% at T0 and 28% at T1) – Grafico 3. Age of patient with diagnosis of delirium was between 32 and 93 years old, NIHSS score 0-10 in 25 patients, score 11-20 in 24 patients, > 20 in 3 patients.
-The incidence of delirium was higher in patients with age between 71 and 93 years old; acute ischemic stroke occurred in 43 patients, hemorrhagic stroke in 9 patients (with delirium screened with 4AT), 26 patients with acute ischemic stroke and 5 patients with hemorrhage at T0 in accordance with DSM V criteria.
16 patients had diagnosis of cognitive impairment in accordance of DSM criteria. Twelve patients died during hospitalization because of medical or neurological complications (6 patients were not evaluated at T1); all of them had score at 4AT indicative for delirium.
-Delirium was associated with worse outcome (Rankin scale at discharge) and higher NIHSS score.
-CDT was administered totally to 64 patients in 100 because of neurological deficits or changes in consciousness levels; score on CDT was pathologic (positive) in 33 patients. Patients with score on 4AT suggestive for delirium could not take the test.
Excluding patients with history of dementia and those with expressive aphasia, delirium occurred in 39% and 38% respectively.
4AT and DSM showed in all cases significant concordance, 4AT scale has also good sensibility and specificity.

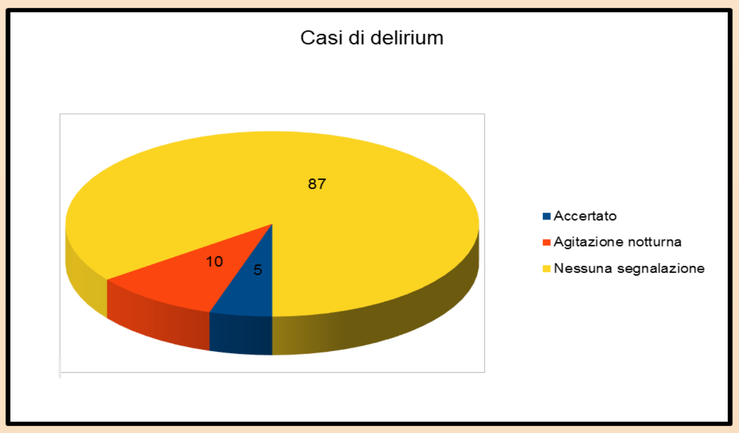

Grafico 1: analisi retrospettiva di 102 pazienti

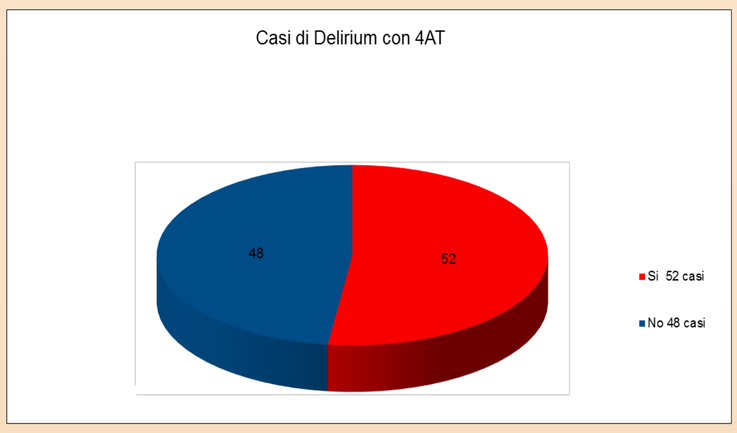

Grafico 2: casi di delirium con scala 4AT

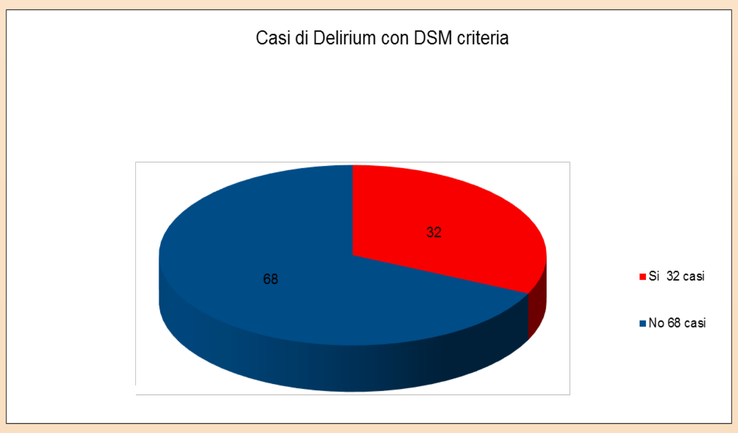

Grafico 3: casi di delirium con DSM V criteria

CONCLUSIONS

Delirium is a common complication post stroke. Its real incidence is dramatically underestimated if medical and nursing staff don't use systematically a correct instrument for diagnosis or screening as gold standard diagnostic criteria (DSM V) or 4AT. The 4AT scale, in comparison to DSM criteria, is an easier tool which incorporates a cognitive screening test and allows to test all patients (also patients with dementia or patients with drowsiness or psychomotor agitation). Furthermore, 4AT test is very brief to assess, do not require formal training, and allows to follow up the patients during the hospitalization (for example if delirium is improved, if patient developed delirium in the acute phase after stroke or during hospitalization etc) in comparison to DSM V criteria.
CDT is not a useful tool for screening of delirium in the acute phase of stroke; it may be used for screening of cognitive impairment, in association with 4AT.

Bibliografia:

1- American Psychiatric Association. DSM V. May 18.2014 pag. 591-605.

2- Inouye S.K. Delirium in older person. The New England Journal of Medicine, 2006, 354; 1157-65.

3-Delirium in the acute phase after stroke: incidence, risk factors, and outcome. Oldenbeuving AW(1), de Kort PL, Jansen BP, Algra A, Kappelle LJ, Roks G. Neurology. 2011 Mar 15;76(11):993-9. 2011bFeb 9.

4-Delirium in acute stroke: a review. Oldenbeuving AW(1), de Kort PL, Jansen BP, Roks G, Kappelle LJ. Int J Stroke. 2007 Nov;2(4):270-5. doi: 10.1111/j.1747-4949.2007.00163.

5-Test accuracy of short screening tests for diagnosis of delirium or cognitive impairment in an acute stroke unit setting.. Rosalind Lees, Sinead Corbet, Christina Johnston, Emma Moffitt, Grahame Shaw and Terence J.Quinn. Stroke. 2013 Nov;44(11):3078-83