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# AGITATION IN THE ELDERLY IN THE EMERGENCY DEPARTMENT

## AGITACIÓN EN EL MAYOR EN EL SERVICIO DE URGENCIA

Filipa Henriques[1], Sofia Domingues[2], Inês Amado[2], Mafalda Cotter[2], Humberto Figueiredo[3], Luísa Delgado[4]

[1]Filipa Henriques, Resident Doctor of Psychiatry. [2]Resident Doctor of Psychiatry. [3]Psychiatric Doctor. [4]Director of the Psychiatry Service.
Centro Hospitalar Médio Tejo

**Correspondencia:** Rua Casal dos Aromas, nº 12, 2300-380 Tomar, Portugal; Mobile number: (+351) 966805991;
E-mail: filipa_henriques@hotmail.com

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## RESUMEN

La tendencia actual del crecimiento de la población anciana presenta un desafío para la atención de salud psiquiátrica. La agitación psicomotora es un cuadro clínico heterogéneo y relativamente común en la urgencia psiquiátrica. Es un concepto amplio que abarca varios estados. La etiología puede ser variada en situaciones médicas particulares, psiquiátricas y mixtas. El psiquiatra debe conocer y estar sensibilizado con la alta prevalencia de la etiología orgánica de estas imágenes. La medicación para la agitación, aunque se usa comúnmente, no debe considerarse como una terapia a largo plazo. Siempre deben asegurarse medidas no farmacológicas para reducir la agitación. En este contexto, los autores consideraron pertinente realizar un estudio documental retrospectivo basado en el análisis de 252 episodios de emergencia en pacientes de 65 años o más que utilizaron la emergencia psiquiátrica de la Unidad CHMT-Tomar en un período de 3 meses. De esta muestra, 66 episodios (26,2%) de emergencia se encontraban en el contexto de agitación psicomotora. La muestra se caracterizó desde el punto de vista epidemiológico, etiología, terapéutica, referencia y otras variables que consideramos relevantes (44 variables) con resultados relevantes para la práctica clínica en psiquiatría.

**Palabras clave:** Agitación, Ancianos, Servício de Urgencia, Psicofarmacología, Psiquiatría, Psicogeriatría.

## ABSTRACT

The current trend of population growth in the elderly population presents a challenge for psychiatric health care. Psychomotor agitation is a heterogeneous and relatively common clinical picture in psychiatric emergency. It is a broad concept encompassing several states. The etiology can be varied in particular medical, psychiatric and mixed situations. The psychiatrist should be aware of and sensitized to the high prevalence of organic etiology of these pictures. Medication for agitation, although commonly used, should not be regarded as long-term therapy. Non-pharmacological measures to reduce agitation should always be ensured. In this context, the authors found it pertinent to carry out a retrospective documentary study based on the analysis of 252 emergency episodes in patients aged 65 years and over who used the psychiatric emergency of CHMT-Tomar Unit in a period of 3 months. In this sample, 66 episodes (26.2%) of emergency were in the context of psychomotor agitation. The sample was characterized in terms of sociodemographic characteristics, etiology, therapeutics, referral and other variables that we considered relevant (44 variables) with results relevant to clinical practice in Psychiatry.

**Keywords:** Agitation, Elderly, Emergency, Psychopharmacology, Psychiatry, Psychogeriatrics.

## INTRODUCTION

Average life expectancy has risen dramatically in recent decades. The elderly is the only segment of the population that is expected to grow substantially over the next 50 years (Spar, 2005), which has implications in the clinical activity of all medical and surgical specialties, namely in Psychiatry.

Psychomotor agitation is a heterogeneous and relatively common clinical condition in psychiatric emergency. It is a broad concept that includes a state of hypervigilance, non-purposive hyperactivity, inadequate social and functional behavior, more or less hostile communication, and even verbal and/or physical aggressiveness. The etiology can be varied in particular medical, psychiatric and mixed conditions. The conditions most frequently associated with psychomotor agitation are delirium and dementia. Delirium can be triggered by medical conditions, metabolic changes, intoxications, or withdrawal symptoms. According to the literature, agitation is a symptom present in up to 30% of the elderly in the context of emergency and the recognition of the etiology of these clinical presentations is imperative to opt for a directed and appropriate treatment. The psychiatrist must be aware of and sensitized to the high prevalence of organic etiology of these presentations.

Medication for agitation, although commonly used, should not be regarded as long-term therapy. Typical and atypical antipsychotics (AP), although widely used, are associated with an increased risk of stroke and mortality in the elderly of approximately 3%. When the need to use AP overcomes the risks of its use, studies recommend the use of atypical AP such as risperidone and olanzapine in a short-term therapy, up to a maximum of 6 weeks, when there is persistent aggressiveness. Chronic treatment may require the physician to consider other medications such as antidepressants (AD), namely Selective Serotonin Reuptake Inhibitors (SSRIs) and mood stabilizers such as Carbamazepine. Benzodiazepines (BZD) should be avoided in these situations, since they have the potential to worsen delirium and disinhibit the patient. The increased risks of the use of psychotropic drugs in the elderly are known, so the emergency psychiatrist must make careful use of them, preferably for a short period and inform the caregivers of the associated risks. Non-pharmacological measures to reduce agitation should always be ensured. In the context of the emergency service, the application of these measures may be hampered by the inherent limitations (noise, light, unknown environment).

## OBJECTIVES

To characterize the sample, namely regarding age, gender, place of residence, provenance, previous psychiatric diagnosis and follow-up, presented psychopathology, etiology, referral, comorbidities, previous treatments and in the episode. To compare results with the recommendations in current literature and hypothesize possible explanations for the differences noticed. Known the risk of certain pharmacological classes used for behavioral control in the elderly, namely AP and BZD, it is also intended to reflect on their use in these clinical situations.

## MATERIAL AND METHODS

This is a retrospective documentary study based on the analysis of 252 emergency episodes in patients aged 65 years and over who used the psychiatric emergency of the CHMT-Tomar within a period of 3 months. In this sample, 66 (26.2%) episodes of emergency were in the context of psychomotor agitation, namely restlessness, physical and/or verbal aggressiveness. Subsequently, the data were processed statistically. From each clinical process, 75 variables were collected, of which only 44 more relevant variables were selected to respond to the pre-defined objectives. We characterized the sample in terms of sociodemographic characteristics, etiology, therapeutics, referral and other variables that we considered relevant.

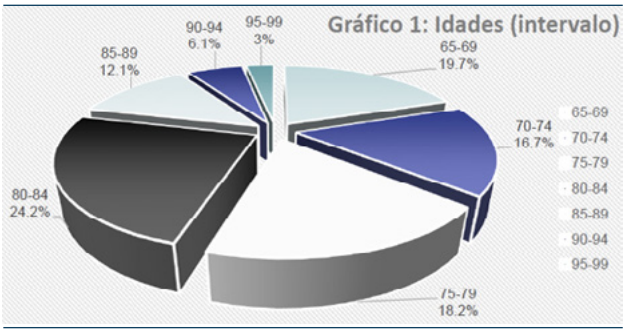


**Figura 1.** Sociodemographic factors: age.

## RESULTS

The sample consisted of 66 episodes of emergency, corresponding to more than a quarter of all episodes of emergency in this period and in this age group. Out of those, 41 were female gender (62.1%) and 25 male (37.9%). The average age of patients studied was 78.2 years old (minimum age 65 years old and maximum 96 years old). In our sample, the vast majority of patients were younger than 85 years old, with the most representative age group between 80 and 84 years old (24.2%). The group over 90 years old represented only 9.1% of the sample (Fig. 1). As for their place of residence (Table I), the majority lived in their own households (78.8%) and 18.2% of the patients were institutionalized (elderly homes or continued care). Regarding provenance (Table II), most were referred from other specialties in the emergency department (57.6%), mostly by General Practitioners. It comes in accordance with the prevalence of organicity associated with this condition (Blazer, 2009), making necessary the exclusion of organicity prior to the referral to Psychiatry. Only 36.4% of the sample was screened directly for Psychiatry. Regardless of their provenance, approximately 6.1% of the patients (n = 4) were brought by the police authorities with a legal warrant. Of these 4 patients, half had an organic etiology and the other half had a psychiatric diagnosis for the condition. One of each diagnosis/etiology had been considered to hospitalization.

**Table I.** Place of residence

| RESIDENCE | | |
|---|---|---|
| Own household | 52 | 78.8% |
| Erderly homes | 10 | 15.2% |
| Continued Care | 2 | 3.0% |
| Homeless | 1 | 1.5% |
| Others | 1 | 1.5% |
| Total | 66 | 100% |

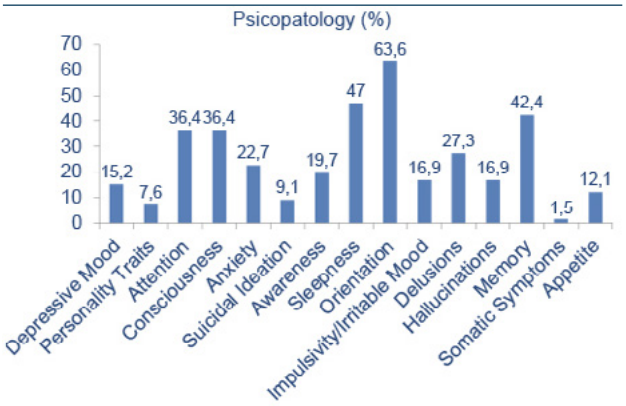


**Figura 2.** Most frequent psychopatology in the sample.

Only 53% had regular previous psychiatric follow-up (at least the last year). Literature reports that in 50% of patients with dementia, at least one episode of psychomotor agitation will occur, during the course of the illness (Blazer, 2009). Taking into consideration the cited data, dementia was the prior psychiatric diagnosis more prevalent in our sample (34.8%), followed by unipolar depression (15.2%), in the same proportion as absence of psychiatric diagnosis.

Of the 42 patients (63.4%) with the diagnosis of dementia, 45.2% didn't present this diagnosis before, which shows that this is an opportunistic moment to identify and adequately guide the patient follow-up to a specialist. The type of dementia more prevalent was the mixed one (16.7%), followed by vascular (7.6%), Alzheimer's (6.1%), frontotemporal dementia (1.5%) and Lewy Body Dementia (1.5%) which does not meet the literature data, whose percentage ranges are, respectively, 20-30%, 20-30%, 60-70%, 20% and finally 15-25% (Santana, 2005). In 30.3% of cases there was no reference to a specific subtype of dementia.

**Table II.**

| PROVENANCE | N | % |
|---|---|---|
| Own home | 19 | 28.8% |
| Nursing home | 5 | 7.6% |
| Other specialties at the emergency | 38 | 57.6% |
| Other wards | 2 | 3.0% |
| Family doctor | 1 | 1.5% |
| Another hospital | 1 | 1.5% |

**Table III.**

| MEDICAL COMORBIDITIES | |
|---|---|
| Hypertension | 26,2% |
| Diabetes | 14,0% |
| Dyslipidemia | 16,8% |
| Previous stroke | 5,6% |
| Epilepsy | 1,9% |
| Heart Disease | 7,5% |
| Respiratory disease | 2,8% |
| Thyroid disease | 2,8% |
| Neoplasms | 6,5% |
| Renal disease | 2,8% |
| Herpes Zoster | 0,9% |
| Auto-imune disease | 0,9% |
| Parkinson Disease | 3,7% |
| Genito-urinary tract disease | 5,6% |
| Vertiginous syndrome | 1,9% |

Regarding psychopathology (Fig. 2), sometimes all the variables defined were not exhaustively described in the clinical records, which we assumed correspond to the inexistence of the psychopathology in question. The most prevalent psychopathological alterations in this study were: orientation (63.6%), sleep (47%), memory (42.4%), consciousness (36.4%), attention (36.4%), delusional ideas (27.3%), anxiety (22.7%), hallucinations (16.9%). Psychotic psychopathology was present in 31.8% of the episodes. The majority of patients were disoriented, and 42.4% presented disorientation in both time and space. Regarding delirious content, the persecutory

theme was the more prevalent. In the hallucinations, the visuals were the most representative, which probably relates to the organic etiologies of these conditions.

In the sample, 3.0% (n=2) of the patients had no etiology (Table III) known for the episode. Of these, one patient didn't perform an organic study, and other was innocent. The organic cause corresponded to 54.3% of the sample, while the remainder were divided between behavioral and psychological symptoms of dementia (BPSD) (22.7%), other psychiatric causes (16.6%), and associations of etiologies (3.0%). It should be noted that, regarding BPSD while etiology, in 40% of the cases no organic investigation was performed. The unknown cause and BPSD diagnosis were based both in the absence of the recommended organic evaluation and in normal results in complementary exams, which justified the exclusion of an organic cause. However, this situation not always imply the absence of an organic diagnosis, but rather a delay of clinical, analytical and imaging manifestations, including in those patients who were admitted to a Psychiatry ward.

The organic causes involved were mainly infectious: of the urinary tract (16.7%) and respiratory (7.6%); and adverse effects of psychoactive substances (15.0%), including abuse of benzodiazepines, opioids, alcohol, sudden withdrawal and withdrawal syndromes. In some cases, organic causes were identified in association (7.5%) and/or association of psychiatric and organic causes (3.0%). Of the psychiatric causes there were: unipolar depression, maniac episode in bipolar disorder, adjustment disorder, persistent delusional disorder, schizophrenia or schizoaffective disorder (psychotic) and personality disorder.

In the referral after psychiatric observation we found that 37.9% were referred to the Family Doctor/General practitioner, 24.2% for follow-up in a psychiatric consultation, 21.2% for hospitalization in a Psychiatric ward and 10.6% were referred to observation by other specialties in the emergency department, mainly Internal Medicine, perhaps reflecting the difficulty of other specialties in managing pharmacological options for behavioral control or the possibility of an initial screening error, as agitation could be wrongly assumed as psychiatric instead of organic.

Co-morbidities: Most people 65 years old and older have at least one chronic medical disease and many of them have several comorbidities (Spar, 2005). This reference corroborates the data collected from chronic medical comorbidities, which were 75.8% in our sample (Table IV). Of the remaining 21.2% there is no reference to medical comorbidities, which doesn´t mean they don't exist.

BZD in the elderly population are associated with a higher risk of falls and hip fractures, in addition to its association with cognitive decline, so they should be avoided (Taylor, 2009). They also have the potential to aggravate delirium and paradoxical reactions, therefore its use is discouraged, with the exception of the possibility of GABA withdrawal syndromes and severe anxiety, where they are first line treatment (Blazer 2011). It was found that 43.9% of the sample had a BZD prescribed before the acute episode. In the episode, there was a slight reduction in the prescription of this pharmacological class at 6%, at the expense mainly of BZD reduction of long half-life in what appears to be beneficial. Of the patients in the sample with prescribed BZD, the majority used BZD with a short half-life, both before (25.8%) and during/after the episode (27.3%) (Table V).

Cognitive enhancers, such as donepezil, rivastigmine and galantamine, showed benefits in reducing the behavioral disorders of dementia, namely agitation, possibly because it stimulates attention and concentration in these patients (Blazer, 2012). In the periods before the agitation episode, its use was of 28.8%, increasing to 36.4% after observation.

Most patients didn't use antidepressants. Of those who had this pharmacological class prescribed, the majority were taking NaSSA (Noradrenergic and specific serotonergic antidepressant) both before and after the observation. Antidepressants, such as SSRI and trazodone, have been associated with efficiency in the control of agitation, even in the absence of obvious depressive symptoms.

However, SSRI are associated with an increased risk of bleeding (Taylor, 2011). In our sample, the use of SSRI antidepressants, alone or in combination, was 12.1% before the episode and 13.6% after the episode. The use of Serotonin Antagonist and Reuptake Inhibitor (SARI) before was 9.0% and after 7.5%. However, there was still an increase in the prescription of the first (SSRI) and reduction in the prescription of the second (SARI) after the episode of acute agitation (Table VI).

Typical and/or atypical AP increase the risk of cerebrovascular disease and mortality when used in dementia populations (Blazer, 2009). In our sample, this class was used in 41% before the episode to 83.3% during/after the episode which may be related to the fact that the objective is the acute

**Table IV.** Etiology of the agitation

| | | |
|---|---|---|
| Unknown | | 3.0% |
| Other psychiatric causes (16.6%) | Depressive unipolar disorder | 1.5% |
| | Maniac episode in bipolar disorder | 4.5% |
| | Reactive attachment Disorder | 3.0% |
| | Psychotic Disorders | 6.1% |
| | Personality Disorders and Depressive unipolar disorder | 1.5% |
| Worsening dementia | | 22.7% |
| Organic (54.3%) | UTI (Urinary Tract Infection) | 16.7% |
| | Pneumonia | 7.6% |
| | Adverse effect on the central nervous system | 4.5% |
| | Benzodiazepines abuse | 4.5% |
| | Opioids abuse | 3.0% |
| | Sudden withdrawal of psychiatric medication | 3.0% |
| | Electrolyte imbalance | 1.5% |
| | Decompensated DM | 3.0% |
| | Alcohol abuse | 1.5% |
| | Brain space occupying lesion | 1.5% |
| | Pneumonia + arrhythmia | 1.5% |
| | UTI + Electrolyte imbalance | 3.0% |
| | UTI + serotonergic syndrome | 1.5% |
| | UTI + Sudden withdrawal of psychiatric medication | 1.5% |
| Dual (3%) | UTI and Adjustment Disorder | 1.5% |
| | UTI and Maniac episode in bipolar disorder | 1.5% |

**Table V.**

| BENZODIAZEPINES | ANTES | DEPOIS |
|---|---|---|
| None | 56.1% | 62.1% |
| Long half-life | 16.7% | 9.1% |
| Short half-life | 25.7% | 27.3% |
| Median half-life | 1.5% | 0.0% |
| Association (>1 BZD) | 0.0% | 1.5% |

**Table VI.**

| ANTIPSYCHOTICS | ANTES | DEPOIS |
|---|---|---|
| None | 59.1% | 16.7% |
| Typical (T) | 9.1% | 19.7% |
| Atypical (AT) | 25.8% | 51.5% |
| Association (T+AT) | 6.1% | 12.1% |

control of the agitation, being part of the prescriptions made under SOS. It should be noted that in only 31.8% of the episodes there was psychotic psychopathology. Of these, 61.9% had a diagnosis of dementia and a psychiatric condition is only present in 16.6%, so the high use of AP should have been mostly prescribed for behavioral control.

The most prevalent medical comorbidities in the evaluated patients (such as hypertension, dyslipidemia and diabetes) are added to the AP in the risk of stroke and increased mortality and increased QT interval (Taylor, 2010). The as-

**Table VII.**

| MOOD STABILIZER | ANTES | DEPOIS |
|---|---|---|
| None | 87.7% | 87.9% |
| Valproic acid | 9.2% | 9.1% |
| Lithium | 0.0% | 0.0% |
| Lamotrigine | 1.5% | 0.0% |
| Carbamazepine | 0.0% | 0.0% |
| Pregabaline | 1.5% | 1.5% |
| Gabapentine | 0.0% | 1.5% |

**Table VIII.**

| ANTIDEPRESSANTS | ANTES | DEPOIS |
|---|---|---|
| None | 57.6% | 62.1% |
| SSRI | 6.1% | 6.1% |
| Tryciclics | 6.1% | 1.5% |
| IMAOS | 0.0% | 0.0% |
| Nassa | 9.1% | 13.6% |
| SNRI | 6.1% | 4.5% |
| SARI | 4.5% | 1.5% |
| SSRI + SARI | 0.0% | 3.0% |
| Nassa + SARI | 1.5% | 1.5% |
| Nassa + SSRI | 3.0% | 3.0% |
| SNRI + SARI | 3.0% | 1.5% |
| SNRI + SSRI | 3.0% | 1.5% |

sociation of several AP increases even more this risk. In our sample the use of AP occurred before and in the episode with 41.0% and 83.3%, respectively (Table VII).

One of the ways to reduce the use of antipsychotics would be with sedative antidepressants, such as mirtazapine and trazodone, which in our sample were used respectively in 12.1% vs 13.6% and 13.6 vs 1.5%. Mood stabilizers (Table VIII) can also be considered a used class with little prevalence (12.3 vs 12.1%), even though the literature is dubious. Whether before or after the episode, valproic acid was the most used among the mood stabilizers.

## DISCUSSION/CONCLUSION

The current trend of demographic growth in the elderly population presents a challenge for psychiatric health care. In this context, the authors studied the population of patients over 65 years old who were presented to the psychiatric emergency department of CHMT because of psychomotor agitation, in a period of 3 months.

In the sample there was predominance of the female gender. The mean age was 78.2 years old. 78.8% of the sample were between 65 and 84 years old. Most lived in their own home and were referred to Psychiatry from other specialties in the emergency department. Just a minority of patients were brought in by the authorities, in fulfillment of a legal warrant.

Approximately half of the patients had previous psychiatric follow-up. Of that, dementia was the most prevalent psychiatric diagnosis, followed by unipolar depression. When dementia was assumed as the most probable diagnosis in the emergency episode (63.6%), there were this previous diagnosis in about half of patients. The most prevalent type of dementia was the mixed type, followed by vascular dementia, Alzheimer's dementia, frontotemporal dementia and Lewy bodies dementia, which is not exactly coincident with the values reported in literature. About one third did not refer to a specific type of dementia.

Regarding psychopathology, the most prevalent findings were, respectively: orientation, sleep, memory, consciousness, attention, delusional ideas, anxiety and hallucinations. Most patients presented abnormalities in orientation - about 40% presented temporal and spatial disorientation. Regarding delusional content, persecutory beliefs were the most prevalent. Regarding hallucinations, the majority presented with visual hallucinations.

Etiology: more than half of the episodes had an established organic etiology; the remainder were related to BPSD, other psychiatric causes, mixed causes and unknown/non diagnosed etiology, respectively. We should note that in 40% of the cases, no organic investigation was performed, which may have led to a overdiagnosis of BPSD. The organic causes involved were mainly infections (mostly urinary tract and respiratory infections) and adverse effects of psychoactive substances. In some cases, multiple causes were identified in which most of them corresponded to organic causes in association. Regarding psychiatric diseases, we've identified unipolar depression, maniac episode in bipolar disorder, adjustment disorder, persistent delusional disorder, schizophrenia or schizoaffective disorder (psychotic).

After psychiatric assessment, a treatment plan was established and patients were oriented as follows: follow-up by the general practitioner (family doctor) after discharge, follow-up in a psychiatric consultation after discharge, hospitalization in a Psychiatry ward or referral to observation by other medical specialties in the emergency department (10.6%), mostly to Internal Medicine.

Comorbidities: about 75.8% of our sample had surgical and medical chronic comorbidities.

43.9% were taken benzodiazepines prior to admission, so the treatment plan comprised benzodiazepines' dose reduction during and after the episode. Preceding the agitation episode, the use of cognitive enhancers was 28.8%, increasing to 36.4% after observation. Most of the patients didn't use antidepressants. Of those who had this pharmacological class prescribed, most were prescribed a NaSSA both before and after observation. ¼ used SSRI antidepressants, alone or in association, with a slight increase in prescription after observation. The use of SARIs was observed in a quarter of the sample before the episode, with a substantial prescription reduction after the episode of acute agitation. Regarding mood stabilizers, their use was less prevalent in every moment (before, during and after the episode) which, for some subtypes of mood stabilizers, can be considered a underprescription. Valproic acid was the most used among the mood stabilizers. AP (typical and/or atypical) are associated to a rise in the risk of morbidity and mortality, when used chronically in dementia, which corresponds to the majority of our sample. In this sample, there was recourse to this class in 41% of patients before the episode, and they are prescribed to 83.3% of patients during and after the episode, which represents an increasing to double in the episode. The association of several AP increases this risk even more.

This study has limitations because it is mainly retrospective and performed by reading clinical processes, where information may have been omitted or overvalued. It will be important to evaluate prospectively (after about two years) this sample, regarding the recurrence of episodes of agitation and their contexts, morbidity and mortality, and possible relationship between recurrence and prescribed psychotropic medications.

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