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Delirium in older outpatients

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Chapter 7

General Discussion

1. Introduction

Little is known about delirium in older outpatients. This thesis is the result of my research on detection, prevalence and prognosis of delirium in this patient group. This research included three studies about screening instruments and two epidemiological studies. I will discuss the studies and compare their results with existing knowledge.

2. Screening for delirium in older outpatients

Rapid screening instruments for delirium

To improve delirium detection, it is important that screening tests can be administered by health care professionals with different levels of education. In addition, administering the test should not take long so that many patients can be screened frequently. The aim of the first study was to perform a systematic review of attention-, arousal- and other rapid and easy-to-administer bedside screening instruments for delirium (3 minutes or less to administer). We found that most rapid screening instruments for delirium were attention tests or level of arousal tests. Most instruments were developed in hospitals and nursing homes. No test were validated for home-care. Seven tests had sensitivity $\geq 90\%$ and also specificity $\geq 80\%$ in older patients in general. Two tests of arousal —OSLA and RASS—had reproduced high sensitivity and specificity in older patients. Arousal tests seem to perform well in patients with dementia as well. It seems logical that tests for attention or level of arousal would perform best, because disorders in attention and arousal are core features of delirium.

In light of these results, we propose a two-step approach to improve delirium detection with a minimum of burden on professionals and patients. A highly sensitive tool is needed in the first step to detect as many possible cases of delirium as possible (few false-negative cases), and a highly specific tool in the second step to make definitive diagnoses (few false-positive cases). A physical check-up of all older outpatients with psychiatric or psychogeriatric symptoms during assessment is important to make sure there are no underlying illnesses that cause the psychiatric or psycho-geriatric symptoms, especially when you think the patient might have a delirium. This is important to make sure only patients who actually have delirium will get a medical check-up otherwise it is unnecessary time-consuming. In addition, delirium will probably be missed less often if untestable patients are scored as screen-positive in the first step (1–3). In some test accuracy studies, which we included in our review, patients had been excluded if they were considered too ill or too drowsy, but many of these patients may have had delirium.

Commonly used assessments of attention

The aim of the second study was to investigate the test accuracy of eleven assessments that are commonly used in psychiatric examinations to detect attention disorders. An assessment with high diagnostic quality might be useful as a screening instrument for delirium in older outpatients. Four observations, three explorations and four short tests of attention were included. The observations “Dozing off during conversation” and “Dozing off when not stimulated” had high specificity, but also low sensitivity. Previous studies on standardized short observations of attention reported similar findings in hospitalized patients (4,5). Test accuracy of the explorative questions was low. Of the attention tests, Serial 7s and WORLD spelled backwards scored very high respectively high sensitivity, but specificity of both tests

was low. The combination Serial 7s and WORLD spelled backwards also had high sensitivity but low specificity.

We concluded that no single observation, exploration or short test of attention had both high sensitivity and high specificity. Probably, attention deficits in delirium are best detected with a combination of observations and short attention tests. Other authors also concluded that when simultaneously performing MOTYB and assessing for subjective/objective confusion high sensitivity and modest specificity was achieved (1,2). However, as these are all bedside tests, the patient has to be visited, which is not always possible immediately in an outpatient setting.

A delirium caregiver questionnaire

Most screening instruments are not suitable for triage in older outpatients, because they are not short or require bedside assessment (1,6). A quick way to screen for possible delirium in older patients after referral for psychiatric outpatient care, is to ask caregivers for information by telephone. They know the patient very well and can detect changes in behaviour of the patient. The information could indicate that the patient possibly has a delirium and an emergency visit is necessary. Therefore, we developed a short and sensitive delirium caregiver questionnaire (DCQ) that could be administered by telephone for triage of elderly outpatients with cognitive impairment. The final DCQ consisted of the following items: emergency visit requested at referral, sleeping disorder, fluctuating course, hallucinations, suspicious thoughts, previous delirium, and recent discharge from hospital.

The DCQ results indicated that an emergency visit was required (screen-positive) in 35 of 234 screened patients, of which 19 were eventually diagnosed with delirium (54%). In the other 199 patients, the DCQ indicated that 50 patients required an expedited visit and 30 had delirium. Also, the mean number of days to the first visit dropped from 31.6 to 11.2 in delirious patients. These advantages speak for the use of the DCQ. However, sensitivity and specificity of the DCQ were moderate (both 73.5%), and lower than expected. Possibly, caregivers had not reported sleeping disorders or symptom fluctuation at the time of triage even though these symptoms were found to be present during the psychiatric workup (62%). To improve the sensitivity and specificity of the DCQ, the interviewer has to be alert to symptoms reported by the caregiver that could be indicative of the presence of delirium, so that clarifying questions can be asked. Furthermore, we found that the terms hallucinations or delusions may not always be understood by caregivers. It might also be difficult for the interviewers to deal with unclear answers of caregivers. Therefore, the questionnaire will be accompanied with an instruction.

Other caregiver delirium instruments like the Informant Assessment of Geriatric Delirium (I-AGeD) (7) and the FAM-CAM (8) are also based on caregiver information. The I-AGeD is developed for hospitalized patients with and without dementia, and it takes less than 5 minutes to administer. At a cut-off score greater than 4 sensitivity was 77.4% and specificity 63.2%. In patients without dementia, sensitivity was 100% and specificity 65.2%. The FAM-CAM was developed to identify delirium in older in- and outpatients with and without dementia. The FAM-CAM can be used during a phone interview. In the study mentioned above the FAM-CAM had an overall sensitivity of 57% and specificity of 82% for delirium. Among patients with dementia, the sensitivity was slightly higher (61%), but the specificity was lower (74%). It takes more than 5 minutes to administer.

Implications for screening practices

To improve delirium detection in older outpatients, a screening or triage instrument could be an important addition to usual care. Promising tests which are likely to be user-friendly for homecare nurses and other health professionals who work for older outpatients, are short attention tests in all patients and short arousal-tests in patients with dementia as we found in our review. The DCQ is useful when having a first contact with a care-giver. The homecare nurse can screen for delirium in patients at risk or patients with changed behavior. If the patient is screen positive she can inform the GP who can visit the patient. Screening for delirium in older outpatients by home-care nurses or psychiatric nurses is becoming more a part of daily practice in the Netherlands.

Research has shown that it is uncommon for primary care physicians to use delirium tools (9). In addition, diagnosing delirium in the advanced stages of dementia seems particularly challenging (9). Hence, room for improvement of delirium detection in primary care seems to exist. A good example of the implementation of a screening instrument has been given by an Italian study among older outpatients (10). It is common for the Italian GPs to visit vulnerable patients once a month. The study doctors applied the 4-AT for the sake of the study. In screen-positive patients, the presence of delirium was further confirmed by clinical impression. A delirium was diagnosed in 44.1% of the study-population.

The guideline on delirium for Dutch general practitioners advises the use of the CAM and the DOSS to screen for delirium (11). However, both tools require interviewers to be trained, are time consuming and have not been validated in older outpatients. As mentioned before short tests of attention or arousal might be used by the GP or the DCQ when in contact with the care-giver. We strongly advice/ argue that any patient with changed behavior or frail patients with multiple somatic diseases must be screened for delirium. It is important, as mentioned above, that a patient who is screen positive for delirium gets a medical check-up by the GP and to confirm delirium diagnosis using DSM V criteria.

Recently, an evidence-based guideline about delirium care for nurses was also developed in the Netherlands. The guideline is divided in five chapters: recognition, prevention, diagnosing delirium, treatment of delirium and treatment after enduring delirium. It is based on the HELP-program (12). The chapter recognition describes symptoms, how to distinguish delirium from other syndromes like dementia or depression and which tools can be used (like the DCQ or the DRS-R 1998). The chapters prevention and treatment of delirium describe the risk-factors of delirium but also how to minimize the risk-factors. These chapters focus on good basic care like focusing on orientation, therapeutic activities, early mobilization / exercise, adequate nutritional and fluid intake, optimizing vision and hearing and promoting a good night's sleep. The chapter diagnosis of delirium describes which screening tool or diagnostic tool can be used to screen for delirium or to diagnose delirium in vulnerable elderly in hospitals, nursing homes but also in out-patients. The chapter about treatment after enduring delirium advises to give information about loss of function (ADL), anxiety after a delirium and cognitive function after enduring delirium, how to prevent a new delirium. Long-term effects of delirium and earlier recognition of a delirium are also subjects which are to be discussed. This guideline is a very important step in improving delirium-care in the Netherlands. The home-care nurses are the first, with the care-giver, to see a change in behavior. If delirium is recognized earlier by home-care nurses who can screen for delirium a treatment can start quicker with hopefully better out-comes for the patient. To my knowledge it is one of the first guidelines that includes older out-patients.

Suggestions for further studies

Suggestions for future research include a study to validate the DCQ in different patient-settings. One such study has already started. In this participative study, the DCQ will be adapted for use by the homecare nurse who works with older outpatients. This version could also be suitable for the GP. It might be worth to study the possibility of using the DCQ in other settings too, like a nursing home, a geriatric ward of a general or a psychiatric hospital. In hospitals and nursing homes, the equivalent of an emergency referral in outpatients (item 1) would be admission to the emergency department and the request for (quick) consultation by a psychiatrist or geriatrician respectively. In general practice, it would be important to focus on vulnerable older patients, like those receiving home care, and those seen for an emergency.

It might also be interesting to study whether the observations “Dozing off during conversation,” “Dozing off and MOTYB” or the OSLA and the RASS can be used in older outpatients at home or maybe in nursing homes because they are quick and easy to use and will not be a burden for the patient.

3. Prevalence and prognosis of delirium in older outpatients

Prevalence and risk factors

One of the epidemiological studies presented the prevalence and risk factors of delirium in older outpatients referred to a memory clinic of a psychiatric hospital. We found a prevalence of delirium of 19%, which was unexpectedly high. Nevertheless, this prevalence is very close to that reported by two other studies in memory clinics of psychiatric institutions: 16% and 19% (12,13). These studies also used the Delirium Rating Scale revised 1998 (DRS-R-98), a DSM-IV-TR based diagnostic instrument validate in patients with and without dementia (3). Our result may be partly explained by the selection that occurs when GPs decide to refer patients to a memory clinic of either a psychiatric hospital or general hospital. Patients referred to a psychiatric hospital probably have neuropsychiatric symptoms in addition to the cognitive impairment. Even patients with hallucinations are often referred to a psychiatric hospital, although a clear somatic disorder is present. Hence, the prevalence of 19% might not be applicable to memory clinics in general hospitals. In addition, we did not exclude patients on co-morbid diseases like dementia to maintain generalizability.

The most common triggers of delirium in our patient population were infection, drug-intoxication or withdrawal and metabolic/endocrine disturbance. These are also common triggers found in other studies among older outpatients (13,14). We also found that delirium often has more than one etiology, as described in the DSM IV and illustrated by the case described in the introduction of this thesis.

The patient and his family must know that the change in behavior and cognitive functioning is not solved immediately after the underlying disease or diseases are treated. It takes time recover. If a patient had hallucinations it is important to talk about them with the patient because hallucinations can be experienced as traumatic experience (15). Therefore, prevention of a new delirium is important.

We also found that age and prior delirium were independent non-modifiable factors associated with an increased risk of delirium, but a diagnosis of dementia before intake was

not. Prior delirium and cognitive decline were also found to be non-modifiable risk-factors in other studies among elderly patients (13,14). A reason for this discrepancy might be that in our study, the diagnosis dementia was postponed until the delirium has remitted.

Prognosis of delirium

The last study was done to investigate the prognosis of delirium in 85 older outpatients living at home. The patients had been referred to a memory clinic of a psychiatric hospital. We found that delirium was associated with a poor prognosis. After three months, 45 (53%) had recovered from delirium, 19 (22%) had persistent/ recurrent delirium, 12 (14%) patients had died, and another 9 (11%) could not be revisited for other reasons than death. None of the re-examined patients reported that their cognitive functioning had recovered to the pre-delirium level, and the mean level of daily functioning did not improve substantially either. The rate of diagnosed dementia increased from 7% to 63.8%. Eighteen patients (28.1%) had moved to a nursing home.

Two previous studies among older outpatients had similar findings. A Finnish study found that 55% of the patients died within 2 years after delirium diagnosis compared to 26% of patients without delirium and a Canadian study found that 82% of the patients with delirium died during the 5 years following diagnosis compared to 3 % of patients without delirium. (16,17). A review in hospital patients showed that delirium was still present in 27% of the patients after three months (18). Because the prognosis of delirium in older outpatients is poor prevention, early diagnosis and treatment are important.

Implications for delirium care

The information on prevalence, risk-factors and prognosis of delirium in older outpatients is relevant for Dutch GPs, nurses, psychologists or other persons working with outpatients. The high prevalence implies that is important to be alert to delirium in older outpatients who are frail, have cognitive disorders in combination with neuropsychiatric symptoms, have a history of multiple somatic disorders, and use multiple drugs. The information about risk factors can help to identify patients at risk for delirium and can also be used for prevention. A good example of a program aimed at reducing risk factors of delirium in the hospital already exists as mentioned before. The HELP program consists of screening clients upon admission for six delirium risk factors: cognitive decline, sleep problems, immobility, dehydration, vision or hearing problems. By reducing these factors, the prevalence, the severity and duration of delirium decreased with consistent application of preventive interventions. This program is validated in a hospital-setting but also might be very useful for home-care nurses, for psychiatric nurses of an outpatient clinic or even in the outpatient clinic. Although the interventions start with daily basic care at home, an intensive collaboration with the psychiatric hospital will often remain necessary from which advice can be given or the patient can be diagnosed or treated.

Suggestions for further studies

Our study investigated the prognosis of delirium three months after it was diagnosed. It would be interesting to study the prognosis of delirium after one year or longer to investigate whether the negative effect on memory and on ADL diminishes if patients have more time to recover from delirium. With the knowledge of delirium risk factors in older outpatients at home, preventive interventions can be undertaken, and their effect investigated. Delirium prevention might also be applicable for older patients in a psychiatric hospital.

4. Conclusions

When the research in this thesis commenced, little was known about delirium in older outpatients. We found that delirium occurs frequently in older outpatients referred to an outpatient clinic of a psychiatric hospital. It can be detected more often and quicker when a triage instrument for caregivers is used or with observations of arousal. The prognosis of delirium was poor. Although half of the patients recovered from delirium, their cognitive and daily functioning did not improve to pre-delirium levels. Improved delirium-detection and preventive programs can reduce negative outcomes of delirium and therewith improving quality of life of older outpatients.

References chapter 7

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