Comprehensive geriatric assessment of the nonagenarian population

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Abstract

Our society is facing new economic, political, social and demographic challenges that will require health care services capable of responding to the population’s growing health needs, especially chronic processes linked to ageing. Comprehensive assessment of the frail elderly people represents one of the most important matters in providing proper geriatric care in primary health care (PHC). A cross-sectional descriptive study was conducted on a final sample of 105 patients > 90 years of age cared for by a PHC team. 75.2% of the population were women. 17.1% of the population as a whole and 18.9% of women lived alone. Close to 40% of the population had experienced one or more falls. 65.7% were taking more than 4 drugs/day and approximately 50% had been properly vaccinated. On a cognitive level, the majority of the population suffered from mild decline, despite their advanced age.

We must progress towards comprehensive, proactive and patient-centred care. Good comprehensive geriatric assessment coupled with good care from PHC teams provides elderly persons with a better state of health.

Keywords: elderly, frailty, comprehensive assessment, primary health care.

1. Introduction

Progressive population ageing leads to major economic, health care, familial, social and political repercussions. A sustained increase in life expectancy, a low birth rate and an improvement in health care services for the general...
population and older people in particular foster ageing (WHO 2012). In the case of Spain, this will furthermore be aggravated in the next 15-25 years when the so-called baby boomers reach retirement age (Abellan et al. 2014).

Owing to advanced age, which is accompanied by not only chronic diseases but also concomitant geriatric syndromes (falls, dementia, malnutrition, urinary incontinence, etc.), a large proportion of the people in this segment of the population require home care, and are furthermore considered to be frail persons (Clegg et al. 2013). Between 10-20% of those over 65 years of age are considered fragile, this percentage increasing when you consider those over 85 years of age who are the main consumers of health care resources, reaching more than 65% of health care costs (Imerso 2015).

Frailty is more closely linked to biological age than to chronological age (Wahlin et al. 2006) and is a difficult concept to define and delimit (Martin et al. 2010, Fairhall et al. 2008). However, Salgado proposed the following criteria (Salgado 1983): > 80 years of age, living alone, chronic condition involving a permanent functional disability, polypharmacy, hospital admission in the past 12 months, cognitive decline, etc. These criteria have allowed us to identify and include older people in a situation of greater risk and vulnerability in prevention and follow-up programmes (Christensen et al. 2009).

Frailty and vulnerability are a major health problem, including increased use of health services, increased risk of immobility, disability and death (Boyd et al. 2005, Woo et al. 2006).

At present, the care provided to the most elderly population is done on a daily basis with these situations of frailty, vulnerability, dependence and chronicity (Contel et al. 2012, Morales 2014). Furthermore, the basic coverage of services given to these patients is ensured, but it tends to be fragmentary and lack coordination and exchange of information between health professionals. This leads to a failure to identify many of these patients’ health risks and care needs at a given time, which will hinder the success of our health care activities (Mayo-Wilson et al. 2014, Low et al. 2011). Primary health care must progress towards comprehensive care, where the role of the nurse and his or her competencies must increase, to generate a proactive change in nursing professionals, carers and above all patients themselves (Finnbakk et al. 2012, Sanchez-Martín 2014, Miguélez et al. 2014).

2. Objectives

General:
- To determine the functional and cognitive status of an urban population over 90 years of age cared for by primary health care (PHC) centres.

Specific:
- To determine socio-demographic variables and living arrangements.
- To determine and compare hearing status, visual status and falls experienced.
- To determine vaccine status, polypharmacy and toxic habits.
- To determine the number of admissions and their relationship to cognitive and/or functional status.

3. Methods

3.1. Study design and participants

A cross-sectional descriptive observational study was conducted at a Primary health care centre in the city of Barcelona. Patients were recruited by means of non-probabilistic convenience sampling over a period of 6 months (from December 2014 to June 2015). The entire population > 90 years of age recruited to be studied consisted of: 146 patients, of whom 14 were excluded owing to terminal disease and 27 were excluded as they proved unavailable. Thus, the final sample consisted of 105 patients.

3.2. Data collection

Assessment was carried out through a questionnaire collected by the research team consisting of nurses and based on the patient’s medical record, the variables: sex, age, falls, loneliness, place of visit (home / health center),
polypharmacy, toxic habits, vaccination status (tetanus, pneumonia and flu), hearing and sight, hospital admissions, and proven and validated geriatric assessment scales: the Barthel index (Mahoney 1965), the Lawton and Brody index (Lawton 1969) and the Pfeiffer index (Pfeiffer 1975).

3.3. Data analysis

The data was recorded in a database created specifically in Microsoft Excel and analysed using SPSS software, version 18.0 statistical package. Qualitative variables were described in terms of proportions, calculating 95% confidence intervals. Quantitative variables were described using mean and median as measures of centrality and standard deviation and interquartile range as measures of dispersion. A p value below 0.05 was considered statistically significant.

3.4. Ethical considerations

Before inclusion in the study, written informed consent from patients was obtained, in agreement with Spanish regulations (Ley 42/2002 de Autonomía del Paciente).

4. Results

The population was 93.17 years of age on average. The proportion of women was 75.2% (79) and the proportion of men was 24.8%. No statistically significant differences were observed with respect to age or sex (p = 0.247). 17.1% (18) of the population lived alone; this percentage increased to 18.9% for women. There were no statistically significant differences with respect to living arrangements, age (p = 0.316) or sex (p = 0.382). 60% of them are cared for at home, no statistically significant differences were observed with respect to age (p= 0.163)

None of the individuals interviewed stated that they smoked, and only 3 of them stated that they used to smoke (2 men and 1 woman). 98.1% did not drink alcohol on a regular basis.

No statistically significant differences were observed with respect to sex for any of the three vaccines, with the following results:

Table 1

<table>
<thead>
<tr>
<th>Vaccination status</th>
<th></th>
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<tbody>
<tr>
<td>Against all 3</td>
<td>49,5%</td>
</tr>
<tr>
<td>Tetanus</td>
<td>51,4%</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>75,2%</td>
</tr>
<tr>
<td>Flu</td>
<td>80%</td>
</tr>
</tbody>
</table>

69 patients (65.7%) were taking more than 4 drugs (polypharmacy). No statistically significant differences were observed with respect to age (p = 0.298) or sex (p = 0.0891).

55.2% had some degree of hearing impairment. 62.9% had some degree of visual impairment. No statistically significant differences were observed with respect to sex (p = 0.273) or falls (p = 0.951). 39% of the individuals interviewed stated that they had not fallen at least once in the last 6 months.

Table 2. Geriatric assessment scales

<table>
<thead>
<tr>
<th>Score</th>
<th>Average score</th>
<th>Health condition</th>
<th>average men</th>
<th>average women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barthel</td>
<td>100</td>
<td>76.62</td>
<td>Mild dependence</td>
<td>81.73</td>
</tr>
<tr>
<td>Lawton &amp; Brody</td>
<td>8</td>
<td>3.83</td>
<td>Moderate dependence</td>
<td>3.96</td>
</tr>
<tr>
<td>Pfeiffer*</td>
<td>10</td>
<td>2.74</td>
<td>Mild decline</td>
<td>1.69</td>
</tr>
</tbody>
</table>

* There were statistically significant differences with respect to sex (p = 0.025).
17.1% were admitted to hospital during the study period. No statistically significant differences were observed with respect to sex, but statistically significant differences were observed with respect to cognitive status and Pfeiffer score (p = 0.006) and with respect to functional status and Barthel score (p = 0.018).

5. Discussion

Based on our results, which were consistent with those of other authors, it may be said that instrumental activities of daily living decline before basic activities do, and that therefore Lawton and Brody’s scale is a good predictor of early functional decline and frailty (Millán-Calenti et al. 2010, Gold 2012, Ichazo et al. 2004, Arnau et al. 2012), and the Barthel index is a good predictor of mortality (Arnau et al. 2012, Torres et al. 2009).

The falls have an important predicting role of frailty. The fact that 39% of the patients studied suffered a fall leads us to thinking that there physical condition was not good, although after crossing the fall data with indices of functionality (Barthel and Lawton), we could not observe statistically significant relationship. Therefore, as in other studies, we can say that the falls are due to a conserved physical condition which allows them to move themselves, but that the loss of visual acuity and architectural barriers make them fall more easily (Lavedan et al. 2015, Cervantes et al. 2014).

Finally, it can be affirmed that comprehensive assessment of the frail elderly person represents one of the most important matters in providing proper geriatric care in PHC (Corrales-Nevado et al. 2012, Cervantes et al. 2014). With the changing global demographic pattern, our health care systems increasingly have to deal with a greater number of elderly patients, which is why good comprehensive geriatric assessment coupled with good care from PHC teams may provide elderly persons, especially such vulnerable groups as those over 90 years of age, with a better state of health (Ichazo et al. 2004, Contel et al. 2012).

We believe that the main limitation of the study was the fact that it was conducted in a non-institutionalised population, which might have led to an overestimate of functional and cognitive states of health, although there are already some study stating that patients older than 90 years of age have low comorbidity, unlike the younger elderly (Cayuelas et al. 2013).

References


