Predictors of non-analgesia in nursing home residents with pain: results from the INCUR study.

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BACKGROUND

- The number of people using nursing facilities is projected to steadily increase up to 27 million in 2050\(^1\);
- It is estimated that 45% to 80% of nursing home residents suffer from pain\(^2\);
- One-quarter of older adults with pain does not receive any analgesic drugs\(^3\).

AIMS OF THE STUDY

- Measure the absence of pain treatment in nursing home residents presenting severe pain symptoms;
- Identify the main predictors of non-analgesia.
METHODS AND MATERIALS
Study design and participants

- We used data derived from a longitudinal cohort study (‘Incidence of pNeumonia and related ConseqUences in nursing home Residents’ [INCUR] study) of 800 older persons living in 13 French nursing homes.

- INCLUSION CRITERIA:
  1. pain that affects the Activities of Daily Living (ADL)
  2. daily pain
  3. severe pain measured with a visual analog scale (ie, possible range of 0 to 100, with 0 scoring for the maximum pain; cut-point for severe pain: ≤30).

METHODS AND MATERIALS
Study design and participants

- We have evaluated the following characteristics of the population: Abbreviated Mental Test Score (AMTS), Geriatric Depression scale (GDS), and the Activities of daily living and Instrumental activities of daily living (ADL/IADL);
- A Frailty Index (FI) was computed according to the model proposed by Rockwood and Mitnitski. It’s the proportion of deficits present in an individual out of the total number of age-related health variables considered;
- For each patient was calculated the number of drugs assumed at the baseline assessment;
- The outcome of interest was the prescription of analgesic medications.

METHODS AND MATERIALS

Statistical analysis

- Unadjusted and adjusted logistic regression models were performed to predict analgesic drug prescription;

- The following ones were considered as possible predictors of non-analgesia: age, sex, education, Frailty Index, number of medications prescribed at the baseline.
RESULTS

Table 1: Baseline Characteristics of Patients included in the Study

<table>
<thead>
<tr>
<th></th>
<th>N= 288</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age, years mean (SD)</strong></td>
<td>86.9 (7.2)</td>
</tr>
<tr>
<td><strong>Female Sex, n (%)</strong></td>
<td>220 (76.4)</td>
</tr>
<tr>
<td><strong>Education, years mean (SD)</strong></td>
<td>7.8 (3.2)</td>
</tr>
<tr>
<td><strong>AMTS, mean (SD)</strong></td>
<td>6.8 (2.9)</td>
</tr>
<tr>
<td><strong>GDS, mean (SD)</strong></td>
<td>3.2 (2.4)</td>
</tr>
<tr>
<td><strong>ADL, mean (SD)</strong></td>
<td>3.5 (1.8)</td>
</tr>
<tr>
<td><strong>IADL, mean (SD)</strong></td>
<td>3.2 (0.8)</td>
</tr>
<tr>
<td><strong>Drugs, n mean (SD)</strong></td>
<td>9.5 (4.2)</td>
</tr>
<tr>
<td><strong>Frailty Index, mean (SD)</strong></td>
<td>0.40 (0.10)</td>
</tr>
</tbody>
</table>

Legend: Italic numbers are referred to the non-missing values for each variable; ADL= Activities of Daily Living; AMTS= Abbreviated Mental Test Score; GDS= Geriatric Depression Scale; IADL= Instrumental Activities of Daily Living; SD= standard deviation.

Patients enrolled in the INCUR study n = 800

Patients who met the inclusion criteria n = 288 (36%)
RESULTS

Patients enrolled in the INCUR study
n = 800

Patients who met the inclusion criteria
n = 288 (36%)

n = 702 (66%)
Received analgesic drugs

n = 98 (34%)
NO analgesic drugs
# RESULTS

Table 2: Logistic Regression Analysis

<table>
<thead>
<tr>
<th></th>
<th>Univariate Analysis</th>
<th></th>
<th>Multivariate Analysis</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR (95% CI)</td>
<td>p</td>
<td>OR (95% CI)</td>
<td>p</td>
</tr>
<tr>
<td>Age (per year)</td>
<td>0.98 (0.95-1.01)</td>
<td>0.353</td>
<td>0.99 (0.95-1.04)</td>
<td>0.776</td>
</tr>
<tr>
<td>Female Sex</td>
<td>1.61 (0.91-2.85)</td>
<td>0.098</td>
<td>1.85 (0.92-3.70)</td>
<td>0.084</td>
</tr>
<tr>
<td>Education (per year)</td>
<td>0.93 (0.85-1.02)</td>
<td>0.125</td>
<td>0.84 (0.85-1.04)</td>
<td>0.227</td>
</tr>
<tr>
<td>Frailty Index (continuous)</td>
<td>0.42 (0.04-4.38)</td>
<td>0.464</td>
<td>0.88 (0.04-17.62)</td>
<td>0.935</td>
</tr>
<tr>
<td>Drugs (per each)</td>
<td>0.84 (0.78-0.90)</td>
<td>&lt;0.001</td>
<td>0.82 (0.75-0.90)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Legend: CI= confidence interval; OR= odds ratio.
LIMITATIONS

- INCUR was an observational study which was not designed to identify the determinants of the pain undertreatment;

- the population covered by the study are elderly patients residents in 13 nursing homes in the Midi-Pyrenees region of France, somewhat limiting the generalizability of our results.
CONCLUSIONS

- Pain management in elderly living in nursing homes is still a relevant issue; in our study 66% of patients suffering from pain were not adequately treated, while 34% did not receive any analgesic treatment;

- Regarding the possible predictors of pain undertreatment, scarce data are available. We identified *polypharmacy*, defined as the concomitant use of multiple drug therapies, as a major predictor in analgesic drugs prescription;

- our findings document the importance of reviewing prescriptions in nursing home residents, with the aim of possibly *deprescribing*, which may potentially lead to an improvement in pain treatment.