Predictive clinical score for readmissions in OPAT. Improving safety

1.-OPAT AGENCIES ≠ HOSPITAL AT HOME SERVICES

In Spain there are no Outpatient Parenteral Antibiotic Therapy (OPAT) agencies as such, instead Hospital at Home teams are who administer the iv antibiotics at the community. Those teams hierarchically depend on the hospital, but exert their duties at patients' home. Moreover, they acquire a more interventionist profile than OPAT agencies, so their visit ratios vary from 0.5:1 for doctors to 0.9:1 for nurses.

2.-BACKGROUND AND OBJECTIVES

OPAT is a safe, effective and beneficial practice in healthcare, but studies report 10-20% of readmission rate. Risk factors for readmissions in OPAT have previously been investigated, although there are no available clinical tools that allow us to predict those situations. The main goal of this study is to develop and validate a predictive model for readmissions in OPAT patients.

3.-METHODS

- Prospective study(10/2012-09/2013):1488 patients. 8 Hospital@Home units. Spain.
- Potential risk factors related to patients were collected.
- Descriptive statistics, univariate and multivariate regression and validation of model.

4.-RESULTS

<table>
<thead>
<tr>
<th>Variable</th>
<th>OR (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allergic</td>
<td>1.37 (0.37)</td>
<td>0.63 (0.43)</td>
</tr>
<tr>
<td>Gender</td>
<td>0.85 (1.49)</td>
<td>0.43 (0.02, 7.94)</td>
</tr>
<tr>
<td>Age</td>
<td>0.43 (0.37)</td>
<td>0.63 (0.43)</td>
</tr>
<tr>
<td>Risk factor</td>
<td>0.85 (1.49)</td>
<td>0.43 (0.02, 7.94)</td>
</tr>
</tbody>
</table>

Each point of change in the continuous scale involves an 8% increase on the readmission risk during the follow up. The scale was divided into 3 categories taking as a reference a score of <2. Those patients that had 2 points suffered an OR 1.67, whereas those with ≥3 points got an OR 5.38. The AUC was 0.65, with a good calibration based on the H-L test.

5.-DISCUSSION

- Our readmission rate was slightly lower than the previously described series, which could be related to the model of care.
- Due to the great diversity of disorders and the amount of their cases that are included, we guess that it may be necessary to develop a prognostic scoring system for each disease in OPAT.

6.-CONCLUSIONS

Patients at high risk of readmission during OPAT may be identified using predictive rules. This will allow us to implement measures that reduce the rate of readmissions and contribute to increase the safety of this therapy.

7.-REFERENCES

- proprietary and unpublished data (access not allowed).
- Nathwani A et al, an Observational study to investigate risk factors for hospitalisations in patients with hemophilia, 2010.
- Dall 2002.
- Personal communication with Iñaki Bengoetxea MD, 2014.