How Appropriate is the Patient Referral to a Specialized Clinical Centre in Hypertensive Patients?

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Editorial

Recommendations for referral of hypertensive population are not homogeneous among the different international guidelines. An effort should be implemented in order to unify criteria. According to this, there is a lack of referral appropriateness between health care levels, due to both incorrect referral (25.3%) and late derivation (25.4%). In the meantime, we propose that the best solution should be the adequate coordination between primary care physicians and specialists in hypertension.

Primary Care physicians take care of and control the majority of patients with hypertension [1]. Nevertheless, in some circumstances, doubts regarding to diagnostic and/or therapeutic issues appear, which are likely to imply a referral to a hypertension specialist [2]. In the Spanish public health system, primary care doctors are the gatekeepers of the sanitary system and the cornerstone of referral to a specialized care. A fluent communication and relationship between them is the basis of our patients’ better health care [3]. Referral to a hypertension specialist is recommended under several circumstances to improve outcomes in hypertensive patients, as stated in both the Spanish and European hypertension management guidelines [4]: under suspicion of secondary form of hypertension; in patients with refractory hypertension, damaged kidney function or other target organs; in the need of urgent treatment or difficult to treat hypertension, and others circumstances such as pregnancy. Current knowledge is sparse and suggests that the referral process of hypertensive patients in our country [5-8] is not optimal, showing a number of deficiencies that need to be improved. The aim of our study was to determine the appropriateness of hypertensive patient referrals by primary care physicians to specialized doctors and if they matched with guidelines criteria. Other objectives were to know the characteristics of those referred patients, and to compare the agreement between the diagnosis of suspicion by the primary care doctor and the final diagnosis of the specialist. This was an observational study all over the country. Each reference hypertension specialist (internists, cardiologists and nephrologists) consecutively evaluated 10 patients referred by their primary care doctors, during 3 months throughout 2009. In order to review the clinical characteristics and the appropriateness of the referral, we attended the document published by the Spanish Society of Hypertension [4]. All of the patients were hypertensive, over 18 years old and gave their informed consent to be included in the study. In the first visit the specialists reviewed the diagnosis and the main reasons for referral. Afterwards, they performed the tests or made changes in treatment as considered. We analysed the concordance between the first and final diagnosis and therapeutic management. Means and standard deviations for descriptive variables and proportions for categorical variables were calculated. We used the McNemar Chi square to analyze the differences between percentages. The concordance analyses were evaluated with the Kappa index, and the results were validated according to the Altman classification. The statistical analysis was performed using the SPSS package for Windows, version 19.0 Chicago: SPSS Inc. A p-value of 0.05 was considered statistically significant. We included 1,769 patients (45% women), age 62.4 (13.6) years (18-99), BMI average was 29.0 (4.7) kg/m2. The average time since the diagnosis of hypertension was 8.0 (7.7) years (0-30). At the first visit, mean systolic blood pressure (SBP) was 159.0 (19.9) mmHg, diastolic blood pressure (DBP) 92.3 (12.8) mmHg and heart rate 78.8 (12.7) bpm; 8.8% of patients had their BP controlled. The reasons for referral to specialized care were the following, ordered by frequency: Secondary hypertension (37.8%), refractory hypertension (15.6%), extreme variability of BP (12.2%), non-adherence to pharmacological treatment (11.3%), need of urgent management.
There is a lack of referral appropriateness between health care levels. There is a lack of referral appropriateness between primary care physicians and specialists in hypertension. We propose the adequate coordination between primary care physicians and specialists in hypertension should be a solution to referral appropriateness between health care levels.

**What this study adds:** Are incorrect the criteria 50% of the referral patients to specialized centres. We propose the adequate coordination between primary care physicians and specialists in hypertension should be a solution to referral appropriateness between health care levels.

**References**


**Table 1:** Concordance between the primary care physician cause of referral and the final diagnosis of the hypertension specialist.

<table>
<thead>
<tr>
<th>Cause/Diagnosis</th>
<th>Cause of referral</th>
<th>Diagnosis</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (%)</td>
<td>CI 95%</td>
<td>n (%)</td>
</tr>
<tr>
<td>Secondary hypertension</td>
<td>668 (37.8)</td>
<td>35.5-40.1</td>
<td>260 (14.7)</td>
</tr>
<tr>
<td>Refractory hypertension</td>
<td>276 (15.6)</td>
<td>13.9-17.3</td>
<td>210 (11.9)</td>
</tr>
<tr>
<td>Serum creatinine increase</td>
<td>136 (7.7)</td>
<td>6.5-8.9</td>
<td>231 (13.1)</td>
</tr>
<tr>
<td>Albuminuria or proteinuria</td>
<td>71 (4.0)</td>
<td>3.1-4.9</td>
<td>59 (3.3)</td>
</tr>
<tr>
<td>Need of urgent treatment</td>
<td>210 (11.9)</td>
<td>10.4-13.4</td>
<td>67 (3.8)</td>
</tr>
<tr>
<td>Other situations</td>
<td>20 (1.1)</td>
<td>0.6-1.6</td>
<td>15 (0.8)</td>
</tr>
</tbody>
</table>

GFR: Glomerular filtration rate. *p*<0.05; *p*<0.001 (between the primary referral inform and the final specialist report).

(efficiency, malignant or crisis) (11.9%); hypertension in young (3.4%) and pregnancy (1.4%). With regard to cardiovascular risk and target organ damage, the population under study had a high average risk. Detection of target organ damage was statistically higher (63.5% vs. 48.4%, *p*<0.001) in the hypertension specialist, mainly heart damage (by ECG 43.1% vs. 26.6% and echocardiogram 13.2% vs. 41.7% *p*<0.001) and kidney dysfunction (albumin-creatinine ratio 20.4% vs. 30.2%, increase in plasma creatinine 20.2% vs. 25.6%, low estimated glomerular filtration rate 14.8% vs. 20.9%; *p*<0.001). Table 1 explains the causes of referral and the final diagnosis. Secondary and refractory hypertension and the need of urgent treatment were statistically (*p*<0.001) overdagnostized at primary care level. On the other hand, family doctors did not identify kidney damage in about 50% of the patients. Kappa’s index was calculated to evaluate the correspondence between the causes of referral and the final diagnosis. We observed a poor correlation, with values of 0.208 for secondary hypertension and 0.363 in case of kidney alterations. Doctors at specialized level considered 74.7% of the referrals as appropriated, although 34% (25.4% of the total population) took place too late; they argued that an earlier detection of target organ damage and diagnosis of secondary causes of hypertension might have been attained otherwise. A 25.3% of the referred patients needn’t a specialized level visit. Our study shows an appropriateness of referral of hypertensive patients to specialized care in a good percentage and indeed, it has improved during the past 15 years [9] as compared to previous results of our group. However, some notable deficiencies still remain and guidelines criteria are not properly matched. Some of the referrals are in agreement with previous reports [10]. Agreement between the suspicion diagnosis by primary care doctors and final diagnosis in our study is weak. This fact is reasonable since diagnosis of secondary and refractory hypertension is easier with better access to tests at specialized care. Nevertheless, detection of kidney damage should be improved in the primary care setting. Recommendations for referral of hypertensive population are not homogeneous among the different international guidelines. An effort should be implemented in order to unify criteria. According to this, there is a lack of referral appropriateness between health care levels, due to both incorrect referral (25.3%) and late derivation (25.4%). In the meantime, we propose that the best solution should be the adequate coordination between primary care physicians and specialists in hypertension.

What is known about topic: Recommendations for referral of hypertensive population are not homogeneous among the different international guidelines. There is a lack of referral appropriateness between health care levels.

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**References**