Treatment with vitamin K antagonists: patients' quality of life, valuations and adherence
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Chapter 8

The relationship between adherence and quality of treatment with vitamin K antagonists

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Abstract

Objective
To assess the relationship between adherence and quality of treatment with vitamin K antagonists.

Methods
Patients diagnosed with atrial fibrillation and treated with acenocoumarol were eligible. The percentage of time spent in the target range during the last three months was calculated using linear interpolation. Adherence was assessed with a self-report questionnaire.

Results
Forty patients who spent 100% (high-quality group) and 40 patients who spent less than 50% of time in the target range were approached for the study. Twenty-seven patients with high and 29 patients with low therapeutic quality returned the questionnaire. In the high-quality group, 88% of patients reported to have taken all prescribed medication in the previous month, 96% reported to have been fully compliant in the previous week, and 76% reported to have taken all their tablets on time in the previous week. These percentages were 82, 90, and 72, respectively in the low-quality group. Differences between the groups were not statistically significant.

Conclusion
The results indicate that adherence is not related to time spent in the therapeutic target range in older patients with atrial fibrillation treated with vitamin K antagonists.
Introduction

Treatment with vitamin K antagonists reduces the risk of stroke and other cardiovascular events in patients with atrial fibrillation, while increasing the risk of major bleeding [1]. Therefore, monitoring the effects of treatment using the international normalised ratio (INR) is needed. Quality of treatment can be determined by calculating the percentage of time patients spend in the INR target range. Non-adherence to vitamin K antagonist therapy has been proposed as a major factor for poor quality of treatment, although studies of this association have produced inconsistent results. Van der Meer et al. [2] did not find a relationship between adherence and therapeutic quality of treatment with phenprocoumon, whereas Laporte et al. [3] found a relationship between adherence and quality of treatment with acenocoumarol, but not between adherence and quality of treatment with warfarin. The objective of this study was to assess the relationship between adherence and quality of treatment with vitamin K antagonists.

Methods

Patients diagnosed with atrial fibrillation treated for at least 6 months with acenocoumarol between January 15th and August 19th 2002 at the Thrombosis Service in 's Hertogenbosch, the Netherlands, were potentially eligible (N=1323). Patients with a clinically significant bleeding event or dental or medical surgery in the last three months were excluded from the study. The percentage of time spent in the target range (INR 2.0 to 3.5) during the last three months was calculated using linear interpolation, assuming a linear trend in INR between two consecutive measurements [4,5]. Adherence was assessed with an anonymous, self-report questionnaire, administered by mail. Responses to this questionnaire have been shown to be associated with plasma drug concentrations in a previous study, supporting its validity [6].

Results

Of 135 patients who had spent less than 50% of time in the target range, the 40 cases with the lowest percentage (4 to 46%) were invited for the study (low quality group); 389 patients had spent 100% of time in the target range, of which 40 controls were randomly selected and also invited for the study (high quality group). Patient education on vitamin K antagonist therapy before treatment initiation had been equal for the two groups. Fifty-six patients returned the questionnaire (response
rate 70%). This sample-size would lead to an 80% power to detect a difference of 40% in adherence between the two groups (\(\alpha=0.05\)). The high quality and the low quality groups were comparable in terms of age (71 ± 7 versus 70 ± 9, \(p=0.65\)), gender (65% male versus 64% male, \(p=0.93\)), and response rate (68% versus 73%, \(p=0.81\)). In the high-quality group, 88% of patients reported taking all prescribed medication in the previous month, 96% reported being fully compliant in the previous week, and 76% reported taking all tablets on time in the previous week. These percentages were 82, 90, and 72, respectively in the low-quality group. Chi square tests indicated that the differences between the groups were not statistically significant (all \(p\) values >0.10).

Discussion

Although this study was small, retrospective in design and relied on self-reporting, our results indicate that the difference between high and low therapeutic quality in vitamin K antagonist therapy cannot be associated with major differences in adherence. Other unmeasured factors, such as co-medication, may influence therapeutic quality. We conclude that it is very well possible that non-adherence is not the most determining factor influencing quality of treatment with vitamin K antagonists in patients with atrial fibrillation.

References