Computer-assisted (TAONet®) and manual dosage control of patients on oral anticoagulant therapy in routine clinical practice. Preliminary results of a multicentre study

Cruz N[1], Hernández J[2], López Andrés N[3], Risoto SM[4], Soler T[5], Valles MN[6], Gari C[7], Aceituno S[7], Prada C[7]

[1]Primary Care Centre Jijona, Alicante, Spain; [2]Primary Care Centre Los Olivos, Toledo, Spain; [3]Hospital Municipal de Badalona, Barcelona, Spain; [4]Primary Care Centre Mora, Toledo, Spain; [5]Primary Care Centre Zona 7, Albacete, Spain; [6]Primary Care Centre Seseña Viejo, Toledo, Spain; [7]Outcomes'10, Castellón, Spain

INTRODUCTION

Patients on oral anticoagulant therapy (OAT) need frequent monitoring and appropriate dose adjustment[1]. The time in therapeutic range (TTR) is a measure commonly used to assess the quality of OAT[2]. TAONet® is a computerized decision support software for OAT dose management.

OBJECTIVE

To estimate the time in therapeutic range (TTR) of patients whose dose of OAT is calculated automatically by TAONet® or manually by experienced medical staff in routine clinical practice.

METHODS

Design and setting

- A multicentre prospective, 6-month follow-up, observational study conducted in 6 Spanish healthcare centres (5 primary care; 1 hospital).

Population

- Adult patients on OAT (warfarin or acenocoumarol); with an international normalized ratio (INR) therapeutic range (TR) of 2-3 or 2.5-3.5; and whose dose was managed by TAONet® (**TAONet® cohort**) or manually by medical staff (**manual cohort**); at least 3 months before their inclusion in the study.

Variables and data collection

- Sociodemographic, clinical and treatment variables were collected using an electronic case report form. Data were collected in each control visit scheduled according to routine clinical practice.

Data analysis

- TTR (main outcome) was calculated using the Rosendaal linear interpolation method[3]. Good control was considered when TTR ≥65%[4].
- Mean, standard deviation (SD) and interquartile range were calculated for continuous variables; and relative and absolute frequencies for categorical variables.

** The study is expected to be completed in 17 healthcare centres in Spain and Portugal and to include 612 patients (306 from each cohort). Statistical significance (p-value) was not due to sample size limitations.*

RESULTS

Study population

- A total of 127 patients (60 TAONet® cohort; 67 manual cohort) were included in the study (20.8% of the estimated final sample). ***Table 1***

Table 1. Baseline sociodemographic and clinical characteristics

	TAONet® cohort	Manual cohort
Number of patients, n	60	67
Male, % (n)	61.7 (37)	55.2 (37)
Mean age, years (SD)	72.3 (12.0)	65.7 (14.4)
Main indication for OAT, % (n)		
Atrial fibrillation	68.3 (41)	35.8 (24)
Venous thromboembolism	16.7 (10)	9.0 (6)
Valve prostheses	5.0 (3)	26.9 (18)
Other indications	10.0 (6)	28.4 (19)
Target INR range, % (n)		
2-3	90.0 (54)	70.1 (47)
2.5-3.5	10.0 (6)	29.9 (20)
Comorbidities, % (n)		
1 comorbidity	21.7 (13)	38.8 (26)
2 comorbidities	18.3 (11)	29.9 (20)
≥ 3 comorbidities	60.0 (36)	31.3 (21)

SD, standard deviation; OAT, oral anticoagulant therapy; INR, international normalized ratio.

OAT follow-up

- The mean time on the current OAT was: 8.5 (SD: 7.3) and 8.5 (SD: 8.7) years for the TAONet® and manual cohort, respectively.
- The mean number of follow-up visits throughout the study was 8.8 (SD: 1.7) visits for the TAONet® cohort and 9.3 (SD: 3.1) visits for the manual cohort.

Time in therapeutic range

- Mean TTR was higher in the TAONet® cohort [69.4% (SD: 17.6%) vs 63.1% (SD: 23.7%)]. ***Figure 1***
- The proportion of patients with TTR ≥ 65% was also higher in the TAONet® cohort (66.7% vs 46.3%). ***Figure 2***

Figure 1. Mean TTR

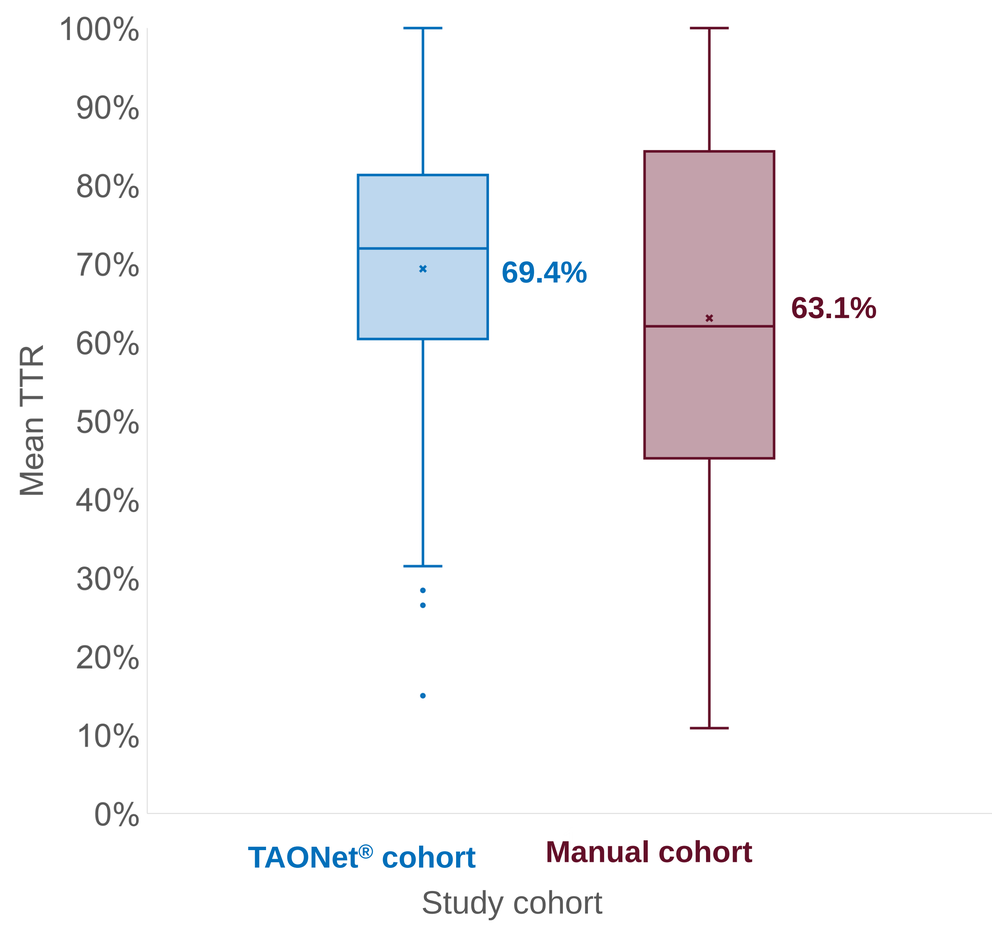
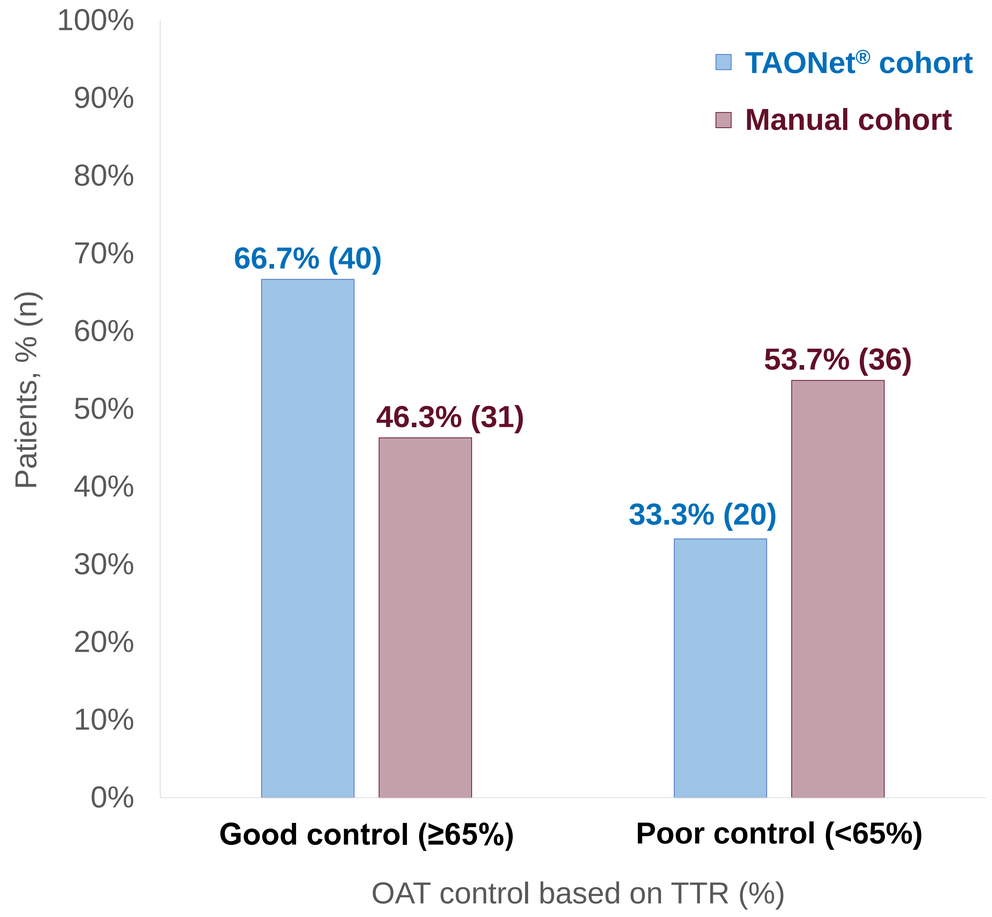


Figure 2. Patient distribution according to their OAT control



CONCLUSION

The results of the study suggest that the computer program TAONet® is a reliable instrument to calculate the OAT dosage of patients with an INR TR established on 2-3 or 2.5-3.5. Its use may help optimize OAT control and patient management in routine clinical practice.

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References: 1. Heneghan C, et al. Lancet. 2012;379:322-34. **2.** Schmitt L, et al. J Thromb Thrombolysis. 2003;15(3);213-6. **3.** Rosendaal FR, et al. Thromb Haemost. 1993;69(3):236-9. **4.** Connolly SJ, et al. Circulation AHA. 2008;118:2019-37