

# Effect of Computer System Using Short Messages Service for Patient Feedback on Blood Pressure Control in Patients with Arterial Hypertension

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## Purpose

To determine the impact of a computer system using text messages (SMS) for patient feedback on blood pressure (BP) control in patients with arterial hypertension (AH).

## Methods

199 patients ( $\geq 18$  y. o.) with established AH were enrolled in the study. 97 of them (mean age  $49 \pm 11.3$  y.o.) were offered to answer to automatically generated SMS requests about their BP level during 1 year. The other 102 patients (mean age  $51 \pm 11.1$  y.o.) received usual care. Their BP records concerning the same period were extracted from ambulatory patients' cards retrospectively. Three control check points were assigned for the group of SMS monitoring - one, six and 12 months of follow up. The number of patients dropped out of SMS monitoring, and the main causes of withdrawal were determined on every checkpoint. A part of patients with goal BP was estimated over each period. Goal BP was defined according to ESH-ESC Hypertension Guidelines (2007). In a year of follow up, the rate of the goal BP achievement was compared in SMS monitoring group vs. the group of usual care.

## Methods: System organization



## Methods: Study design

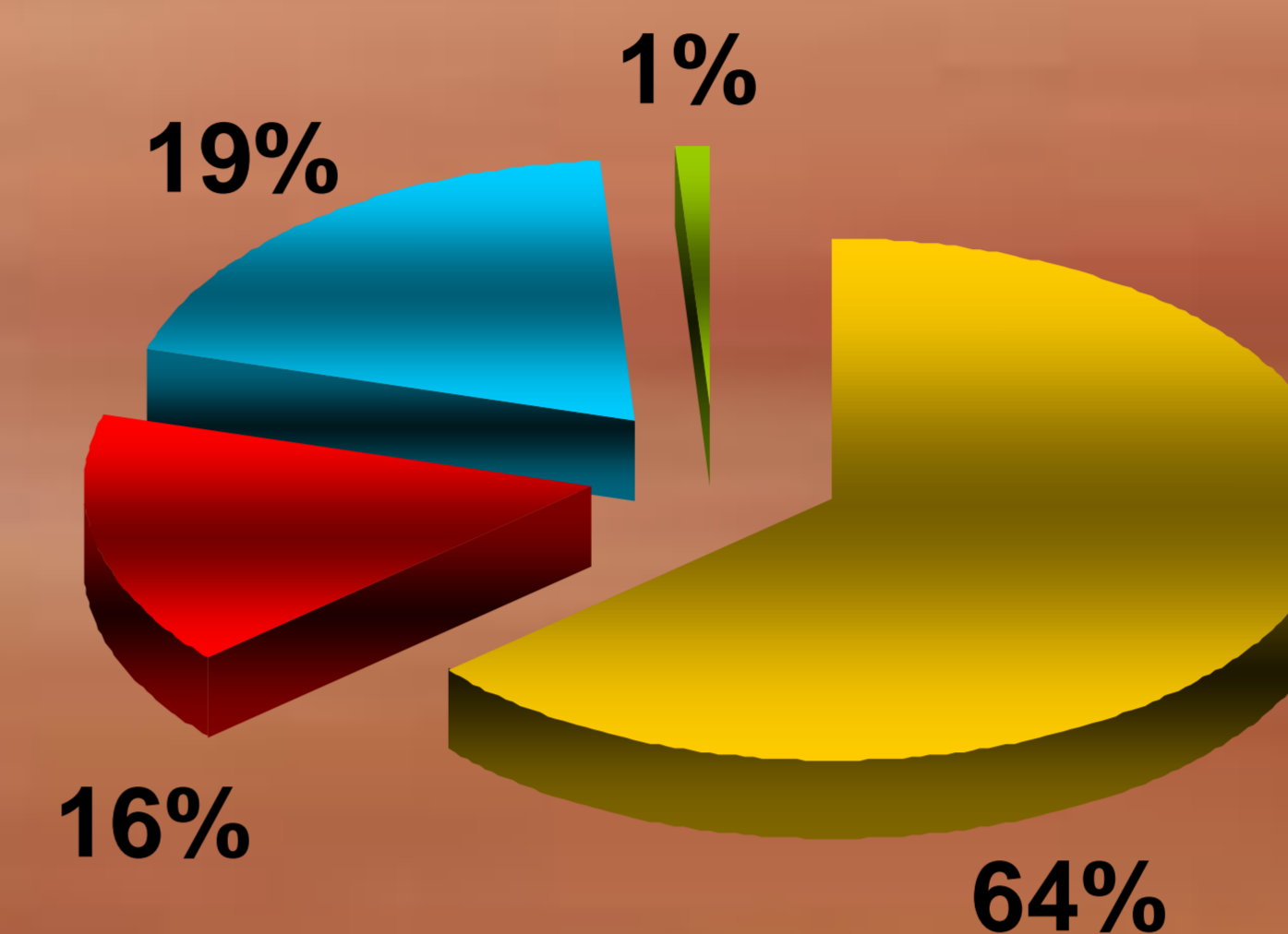
SMS-monitoring group (standard AH therapy + text-feedback)      Control group (standard AH therapy)

START



Comparison of goal BP achievement in the groups

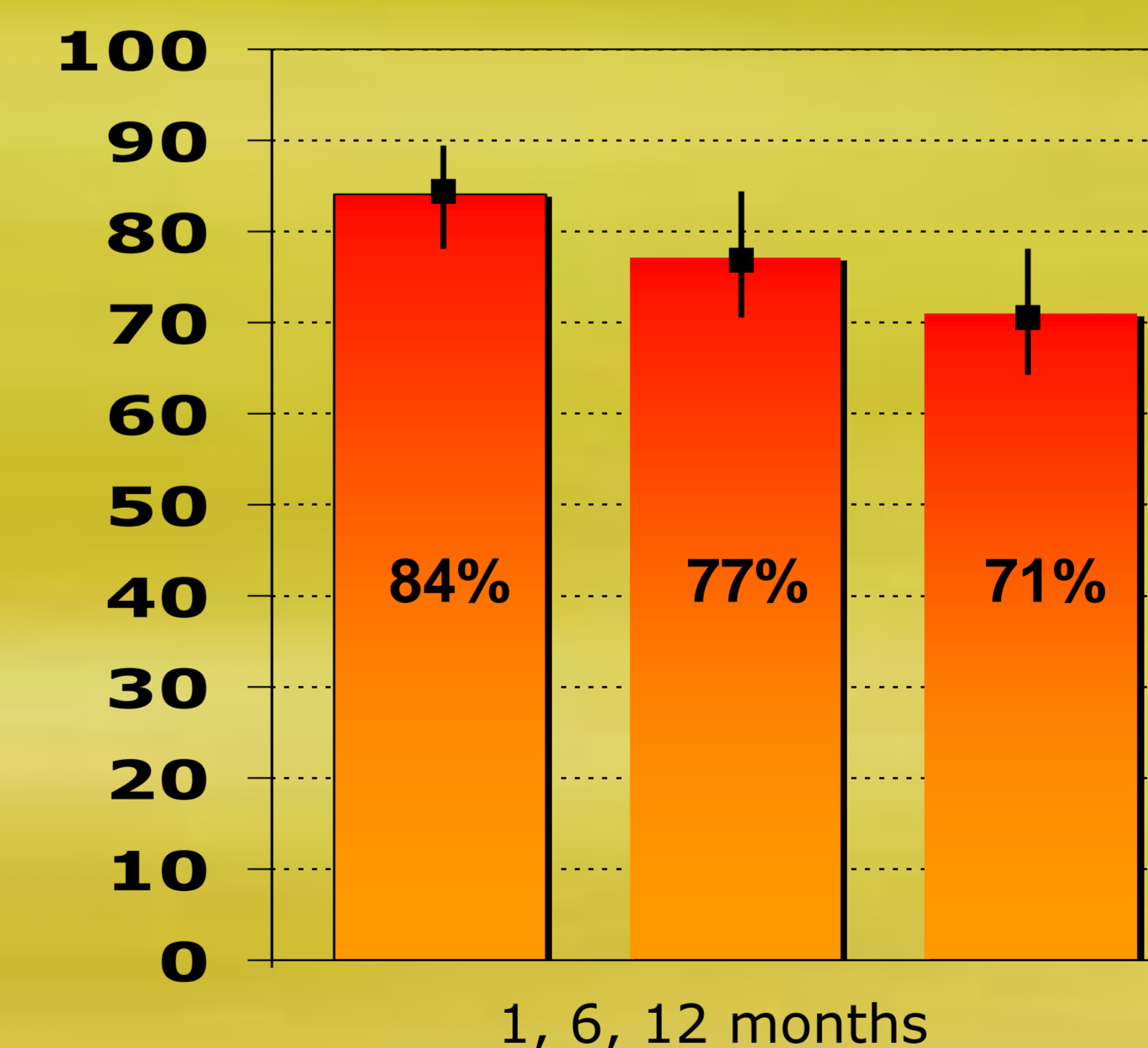
## Results



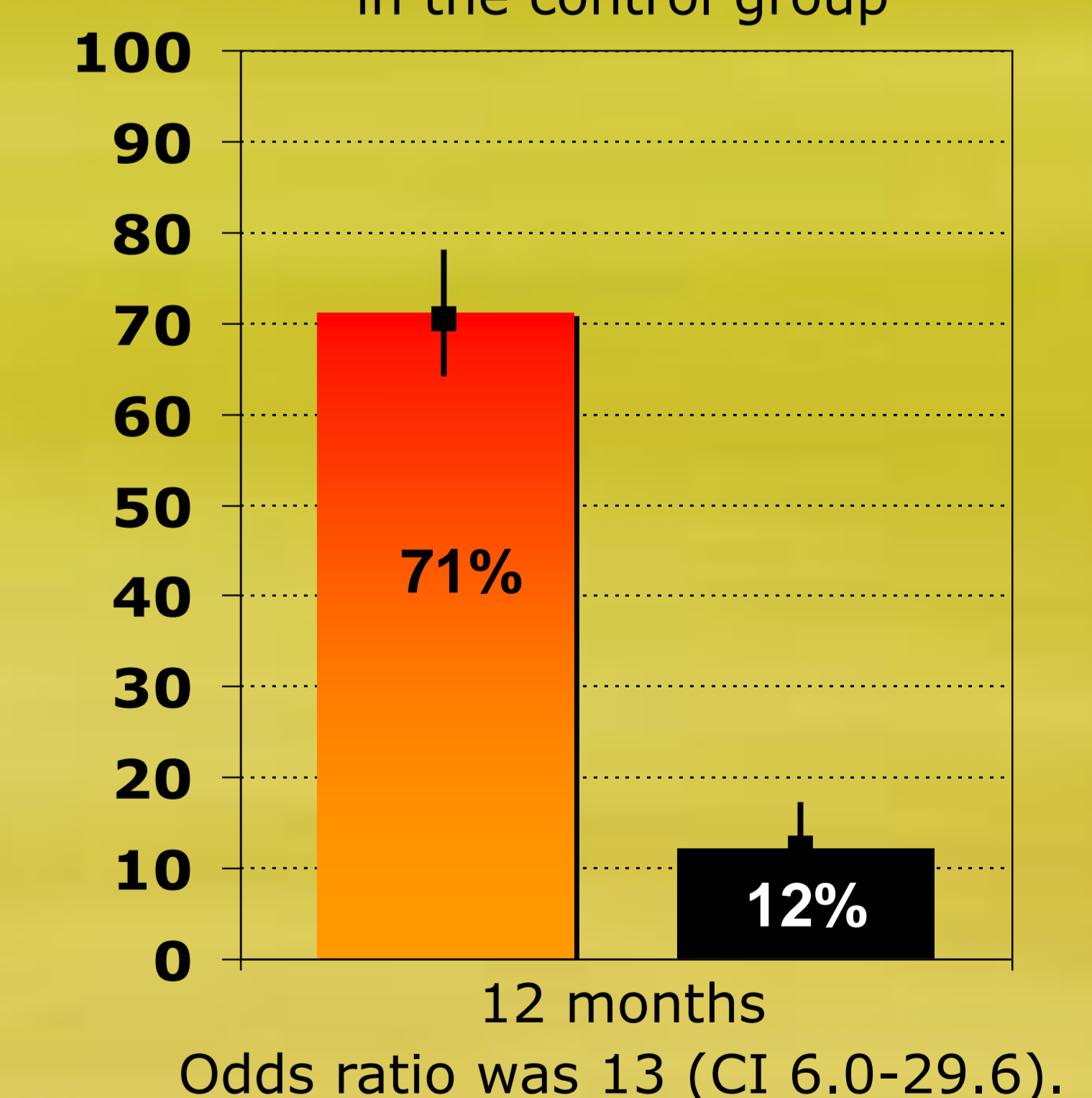
- withdrawn during the first month
- withdrawn from 1 to 6 months
- withdrawn from 6 to 12 months
- completed 12 months of follow up

62 from 97 patients included in the group of SMS monitoring (64%) successfully completed one year of follow up. During the first month 15 patients (16%) had left the study. The main cause in 9 patients (60%,  $p < 0.05$ ) was "difficulties using text messaging". During the period from one to six months of observation 19 more patients had withdrawn from SMS monitoring. The main cause in 15 participants (79%,  $p < 0.05$ ) was "loss of interest". Patients reported they felt well and were satisfied with treatment. During the period from six to 12 months only 1 patient had withdrawn (the cause - "loss of interest").

Goal BP achievement in SMS monitoring group



Goal BP achievement in the group of SMS monitoring and in the control group



## Conclusion

Use of computer system with patient feedback via SMS enhances achievement of goal BP in AH patients as compared with usual care, and facilitates its maintenance in primary care over a long time period.