Mobile Phone Text Messages for Improving Allopurinol Adherence: A Randomized Controlled Trial of Text Message Reminders

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Background: Medication adherence is important to treatment success, particularly in gout where the target level achievement is critical. However, there is no evidence that mobile phone text message reminder is effective in improving treatment adherence and clinical outcomes for gout.

Objective: To evaluate the effect of mobile phone text messaging on the adherence to allopurinol treatment and serum uric acid (SUA) level of patients with gout in a randomized-controlled trial (TCTR20171229004).

Methods: Adult patients who were diagnosed of gout by 1977 ARA classification criteria for gout, with at least 1 month of allopurinol and estimated glomerular filtration rate greater than 30 mL/min/1.73 m2 were enrolled and randomly assigned into 2 groups by block randomization. Patients in the intervention group received a daily short message reminder to take allopurinol for 90 days. Whereas, those in the control group received a weekly short message information about non-pharmacologic treatment for gout in plain language. The primary outcomes were allopurinol adherence, defined as the Medication Taking Behavior for Thai patient (MTB-Thai) score > 21 and SUA level at 12 weeks. The primary analysis was by intention-to-treat.

Results: Eighty-two patients were randomized, with 42 in the intervention group and 40 in the control group. No significant difference of baseline characteristics, SUA (7.66 ± 1.24 vs 7.78 ± 1.17 mg/dL) and MTB-Thai score (18.38 ± 0.73 vs 18.37 ± 0.95) between the two groups. At week 12, 37 patients (88.1%) in the intervention group achieved adherence compared with none of those in the control group (RR for adherence 71.5, 95%CI 4.54 – 1126.80; p = 0.002). SUA level was decreased significantly from baseline in both study groups; however, the reduction in the intervention group was significantly greater than in the control group (-1.47 ± 0.86 vs -0.28 ± 0.39 mg/dL, p < 0.001). Serum creatinine was significantly decreased in the intervention group (-0.03 ± 0.09 mg/dL, p < 0.031), while it was unchanged in the control group (0.01 ± 0.08 mg/dL, p = 0.84).

Conclusion: Patients receiving daily short message reminder significantly show improvement of adherence and reduction in SUA compared with the control individuals. Mobile phone text reminders can be an important tool to enhance allopurinol adherence and help control SUA level in gout patients.

Keywords: Gout, Allopurinol adherence, Mobile phone text messages