Short communication

Sex and the treatment effect in the Chinese Medicine NeuroAiD Efficacy on Stroke recovery (CHIMES) trial

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A B S T R A C T
In the randomized controlled trial of NeuroAiD versus placebo following ischemic stroke, there was a trend for sex influencing the treatment effect of NeuroAiD in improving functional outcome following ischemic stroke (p = 0.075).

1. Introduction

There is growing evidence that sex influences the effects of some stroke treatments. Compared to men, women have greater benefit from stroke thrombolysis in some studies [1,2], but poorer response to carotid endarterectomy surgery [3]. We investigated whether sex influenced the treatment effect of NeuroAiD (MLC601) on stroke recovery at 3 months in the Chinese Medicine NeuroAiD Efficacy on Stroke Recovery (CHIMES) trial.

2. Methods

The multicenter, randomized, placebo-controlled CHIMES trial investigated the efficacy of a Traditional Chinese Medicine (TCM) NeuroAiD in improving functional outcome following ischemic stroke [4]. Participating hospitals’ institution review boards approved the trial. Informed consent was obtained from subjects. We employed the secondary endpoint measure in the CHIMES trial of month-3 modified Rankin Scale (mRS) dichotomy 0–1 (good outcome) versus 2–6. Statistical testing using the Statistical Analysis Software 9.3 (SAS Institute, Cary, NC, USA) included interaction analyses between treatment effect with sex with adjustment for age, stroke-onset-to-first-dose of NeuroAiD duration, hemoglobin, smoking, habitual drinking, hyperlipidemia and angiotensin-receptor blocker use.

3. Results

Of the 1096 participants, 1009 (92%), 639 men, 370 women (Table 1) had complete mRS data. Women were less likely to have good functional outcome than men (p < 0.002). Among women, a higher proportion had good functional outcome with NeuroAiD treatment versus placebo (adjusted p = 0.056). There was no such treatment difference among men (adjusted p = 0.803). In a multivariable logistic regression model, a trend for the interaction between sex and treatment effect was detected (odds ratio 1.13, adjusted p = 0.075; Table 2).

4. Discussion

We found a strong trend of an interaction between sex and treatment effect of NeuroAiD influencing functional status following ischemic stroke. In the study’s placebo arm, and consistent with other data [5], women had poorer outcome following ischemic stroke. Thus, women may have a greater propensity to benefit from stroke recovery strategies, which may explain the sex interaction observed. This is consistent with observed treatment effect of NeuroAiD in subgroups with poorer anticipated prognosis in the CHIMES trial including older age and higher...