Methods

Participants

A total of 85 psoriasis patients who received etanercept treatment between January 2016 and December 2017 in the Seventh People's Hospital of Shanghai University of TCM were consecutively recruited in this study. The inclusion criteria were as follows: diagnosis of plaque psoriasis; moderate to severe disease activity (psoriasis-affected body surface area [BSA] ≥10% and Psoriasis Area and Severity Index [PASI] score ≥8 points); age >18 years; about to receive etanercept treatment; and able to be regularly followed up. Patients with the following conditions were excluded: received TNF inhibitor treatment within 6 months or glucocorticoid within 1 month; history of other inflammatory skin diseases apart from psoriasis; history of solid cancer or hematological malignancies; complication with moderate-severe hepatic or renal dysfunction, or severe infection; known lack of efficacy or allergy to etanercept; and complication with cognitive impairment or other diseases that resulted in incompletion of the Hospital Anxiety and Depression Scale (HADS) questionnaire.

Ethics Approval

This prospective cohort study was approved by the Ethics Review Board of the Seventh People's Hospital of Shanghai University of TCM and was conducted according to the Declaration of Helsinki. Each patient signed an informed consent before the initiation of the protocol.

Data Collection, Treatment and Response Assessment

Age, gender, body mass indexes (BMI), disease duration, psoriasis-affected BSA, and PASI score were recorded at baseline (M0). Information about previous treatments was also collected and categorized into topical therapy, phototherapy, systemic non-biologic treatment,

and systemic biologic treatment. In addition, combined therapy was documented. PASI scores were also evaluated at M1, M3, and M6, and PASI 75/90 responses were calculated which were defined as more than 75% or 90% decrease, respectively, in PASI score from baseline to each visit.

Depression and Anxiety Symptom Evaluation

Depression and anxiety symptoms were evaluated at M0, M1, M3, and M6 using the HADS questionnaire [13]. HADS-Depression (HADS-D) consists of seven questions which were scored as 0–3 points individually, resulting in 0–21 points (classified as follows: 0–7, no depression; 8–10, mild depression; 11–14, moderate depression; and 15–21, severe depression). HADS-Anxiety (HADS-A) consists of seven questions which were scored as 0–3 points individually, resulting in 0–21 points (classified as follows: 0–7, no anxiety; 8–10, mild anxiety; 11–14, moderate anxiety; and 15–21, severe anxiety).

Statistics

Statistical analysis was carried out using SPSS statistical software 21.0 (IBM, USA), and graphs were made using GraphPad Prism software 6.01 (GraphPad, USA). Data are presented as mean ± standard deviation, median (25th–75th quantiles), or number (%). Comparison between two groups was determined by independent two- sample *t* test, paired *t* test, Wilcoxon rank-sum test, or χ^2 test. A univariate logistic regression model was used to evaluate factors affecting PASI 75/90 response at M6 after etanercept treatment, and all factors were further analyzed by the multivariate logistic regression model with the forward stepwise (conditional) method. $p < 0.05$ was considered statistically significant.