Measurement of Disease Severity in a Population of Rosacea Patients

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KEYWORDS

• Epidemiology • Rosacea • Severity • Self-assessment • Survey • Papulopustular • Erythematotelangectatic • Demographics

KEY POINTS

- The authors developed a validated self-assessment tool that facilitates more accurate assessment of rosacea severity in survey studies.
- Prior to this assessment tool, determination of rosacea severity was based on costly in-person clinic visits.
- Rosacea was more severe in men and younger patients; age significantly predicted disease severity, with younger patients (age<60 years) reporting more severe rosacea.
- Younger patients also spent longer taking care of their rosacea on a daily basis, which may increase the morbidity of the disease.

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INTRODUCTION

Rosacea is a chronic skin disorder with unclear pathogenesis. The National Rosacea Society Expert Committee created a grading system and identified 4 subtypes: erythematotelangiectatic, papulopustular, phymatous, and ocular.[1] Much remains unknown about the natural history of rosacea; it is unclear if each subtype is a discrete form of disease or if there is a natural progression between subtypes.[2] Rosacea may progress from the erythematotelangiectatic to the papulopustular subtype, with a majority of patients developing the papulopustular subtype prior to phymatous changes.[3] Longstanding, untreated rosacea can progress to phymatous changes, fibrosis, and disfigurement.[2]

The estimated prevalence of rosacea ranges from less than 1% to greater than 20%.[4–8] Previous epidemiologic studies have provided few answers about the severity of rosacea and its relation to patients' demographics within populations because there is a paucity of validated severity measures.[9]

The authors developed a validated self-assessment tool that facilitates more accurate assessment of rosacea severity in survey studies (Tuchayi SM, Alinia H, Lan L, et al. Validity and reliability of a rosacea self-assessment tool. Submitted for publication). Prior to this assessment tool, determination of rosacea severity was based on costly in-person clinic visits. The purpose of this study is to report the distribution of self-assessed rosacea severity scores within a population of rosacea patients and describe the relationship between disease severity and demographic factors.

METHODS

Subjects were adult patients at the Wake Forest Baptist Medical Center dermatology clinic from 2011 to 2014 who received a clinical diagnosis of rosacea (*International Classification of Disease, Ninth Revision*, code: 695.3) from a Wake Forest dermatologist. Institutional Review Board approval was obtained prior to initiation of this study. Data were collected from October 2014 until February 2015. Eligible rosacea patients were identified using the Wake Forest Baptist Hospital transitional data warehouse and the electronic medical record system. Children were excluded because rosacea is not typically present in children and the measures used were not validated in children.

To recruit subjects to complete the survey in person, 165 patients were contacted via phone. A total of 46 subjects who came to the office for the validation of self-assessment tool study were recruited to complete the survey during the same visit. A pre-survey letter was mailed to 432 subjects to inform them that they would receive the survey via mail. Twenty subjects declined to receive the survey. Surveys were mailed to 412 subjects. Sixteen surveys were returned by the post office because of address changes. A total of 195 surveys (149 via mail and 46 in person) were completed and analyzed (**Fig. 1**). All participants who completed the survey by mail also completed a previously validated self-assessment tool. Patients selected images to identify the severity of their symptoms; categories included erythema, papulopustular lesions, ocular symptoms, and nasal involvement. Scores ranged from 2 (least severe) to 8 (most severe). Subjects were offered financial compensation for their travel expenses and time. The overall response rate of the survey was 44.1%.

Results were reported using descriptive statistics. Regression analysis was performed to identify independent outcome predictors. To study the relationship between age and demographic variables, the population was divided into two groups: ages greater than or equal to 60 years and ages less than 60 years. Correlation of variables with duration of disease was also studied by creating two groups: duration of disease greater than or equal to 11 years and duration less than 11 years. Between-groups comparisons were completed using chi-square tests for proportions and *t* tests or analysis of variance for continuous variables.

The results of the survey were compared with 4 studies:

Feldman and colleagues (2001)[10]: a database analysis of the US National Ambulatory Medical Care Survey from 1990 to 1997 querying office visits associated with the diagnosis of rosacea.

Spoendlin and colleagues (2012)[11]: a retrospective case-control study of 60,042 patients with rosacea in the United Kingdom using the UK-based General Practice Research Database.

Kyriakis and colleagues (2005)[12]: a cross-sectional study of 615 rosacea patients from 1995 to 2002 in an outpatient population at a state hospital dermatology clinic in Greece.

Khaled and colleagues (2010)[13]: a retrospective study of 244 rosacea patients diagnosed in the outpatient Dermatology Department of the Charles Nicolle Hospital in Tunisia between 1990 and 2003.

RESULTS

Responders Versus Nonresponders

Nonresponders consisted of 263 patients (44.1%) who received phone calls, the mail