Cartesian Model of the Clinical Behaviors of Keloid Disorder, Implementation of an Updated Keloid Staging System, and Call for Establishment of an International Keloid Registry

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Running Title
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BACKGROUND
Keloid disorder (KD) has a highly variable clinical behavior, ranging from patients who only develop one or a few keloid lesions in their lifetime to patients who develop extensive disease involving various parts of their skin within a few years.

OBJECTİVE
To assess variability in clinical behaviors and rates of progression of KD through clinical data analysis.

MATERİALS AND METHODS
A retrospective analysis of two large clinical datasets was conducted. The first dataset comprised 1088 consecutive patients. The second dataset was obtained from an ongoing online keloid survey that the first author launched in November 2011. A total of 1,709 participants were asked to provide answers to numerous questions about their keloids, including an assessment of their keloids' growth rates over time.

RESULTS
Among 971 patients in the clinical dataset who met the entry criteria and were analyzed by the first author, 508 (52.32%) patients had stage I disease, 308 (31.72%) had stage II, 115 (11.84%) had stage III, and 40 (5.15%) had stage IV. Seventy-eight (8.02%) patients had stage I KD >15 years after disease onset. Additionally, 52 (5.35%) patients developed stage II disease, 15 (1.54%) developed stage III, and four (0.41%) developed stage IV ≤3 years of disease onset.

Similar findings were observed by the co-author. Among 976 patients who met the entry criteria, 86 (8.81%) had stage I KD >15 years since disease onset, 42 (4.30%) developed stage II disease, 13 (1.33%) developed stage III, and three (0.31%) developed stage IV ≤3 years of disease onset.

In the survey dataset, approximately one third of the participants reported having stable disease and no progression of KD at 1, 2, 5, and 10-year timepoints. About 10% of the patients reported a 50% increase, and approximately 6% reported doubling of their keloids size at 1, 2, 5, and 10-year timepoints.

Regarding the treatment response and reduction in keloids size, only 6% of the survey participants reported some degree of reduction in the size of their keloids at the 1-, 2-, and 5-year timepoints and about 8% at the 10-year timepoint.

CONCLUSİONS AND RELEVANCE

Proper comparison of clinical and/or laboratory outcome data is meaningful only among patients with similar disease biology and clinical behavior. The authors recommend that keloid researchers incorporate the variability in clinical behavior of KD in planning for clinical or laboratory experiments and in data analysis. All keloid researchers are invited to collaborate in establishing an international Keloid Registry to meticulously track and understand the clinical behavior of KD.