

The Appropriate Grading Tool to Assess Acne Severity in Face-to-face Consultation and Digital Skin Images*

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Abstract

Background: Acne vulgaris is a multifactorial disease of the pilosebaceous unit affecting adolescents and young adults. This study examined whether acne assessment measures, validated for face-to-face use, can be used to assess acne lesions captured from digital images. The use of digital images is a useful and innovative way to continue delivery of follow-up care to patients despite barriers such as distance and time.

Objective: To determine the most appropriate acne-grading tool to assess the acne severity during face-to-face consultations and in digital skin images.

Method: A total of eighteen patients with facial acne vulgaris were included. Two dermatologists-in-training evaluated the acne-severity during face-to-face visit using validated acne assessment measures: Total Inflammatory Lesion Count (TILC), LEEDS Technique and Investigator's Global Assessment (IGA). Digital images obtained during initial consult were presented to the same raters during weeks 6 and 12 and graded accordingly. Cohen's kappa was used to measure agreement between evaluations of two raters and acne grading tools.

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Results: Raters had significant moderate agreement in ratings using the three grading tools during face-to-face visit but Investigator's Global Assessment had the highest measure of concordance. Ratings on the digital images by each rater during week 6 and 12 had significant substantial agreements based on Total Inflammatory Lesion Count. The inter rater reliability had significant moderate agreement in ratings of digital images during week 12 using Total Inflammatory Lesion Count and Investigator's Global Assessment. Total Inflammatory Lesion Count had the highest intra rater agreement during ratings of face-to-face and digital skin images, while LEEDS had the lowest measure of concordance.

Conclusion: All the three acne severity tools may be used for evaluating acne severity during face-to-face consultation. The Investigator's global assessment may best be used for face-to-face assessments while the total inflammatory lesion count may best be used in digital skin images.

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INTRODUCTION

Acne vulgaris is a common dermatological condition primarily affecting the vast majority of adolescents and young adults. It is one of the most common dermatological problems encountered in Out Patient Clinics of Dermatology.¹

Although easy to diagnose, the polymorphic nature of acne vulgaris and its varied extent of involvement do not permit simple evaluation of its severity. Because the acne lesions may vary in number during the natural course of the disease, various measurements have been developed, based on clinical examination and photographic documentation, to assess the clinical severity of acne vulgaris.²

The Leeds Revised Acne Grading System, published in 1998, provides a photographic standard for acne grading of the face, back and chest. This system is comprised of 12 facial grades.

In 1996, Lucky et al.⁶ assessed the reliability of acne lesion counting. Acne counts were recorded on a template divided into five facial segments: Right and left sides of the forehead, right and left cheeks and chin. The nose and the area around it were excluded. Counts of each lesion type were recorded within each segment of the template. Total lesion count, along with total inflammatory lesions and comedonal counts, were then calculated. They concluded that reliability of acne lesion counting was excellent when performed by the same trained rater over time.

The grading scale for overall severity by Allen and Smith Jr. has been the template for global assessments in many acne trials as an Investigator's Global Assessment (IGA) scale. It was based solely on descriptive text, not on photographs, and also added the dimension of increasing extent of facial involvement. It further demonstrated the severity scale correlated with inflammatory and non-inflammatory lesion counts.⁷

Technology offers new ways to deliver care to dermatology patients. Dermatology is a specialty long accustomed to using images in many aspects of its practice, including education, surveillance, and

patient follow-up. High quality digital cameras are now widely available. Although initially adopted by patients as consumer devices, physicians and patients have been looking to explore the healthcare applications for such devices.³

Digital imaging in dermatology care has been highlighted as a priority area for research for both the American Telemedicine Association, and internationally by the UK's National Institute for Health and Clinical Excellence. The application of this methodology could provide dermatologists a tool for ongoing care, allowing them to remotely monitor patient progress.³ Digital images and clinical information can be transferred from patient to clinician over the internet allowing asynchronous, remote assessment.³ Acne patients are well suited to this approach given that they are generally technologically able, require ongoing follow-up but have a non-malignant condition.

Although many acne-grading tools have been validated, in our institution, the most appropriate acne-grading tool has not been established when used in face-to-face setting and in evaluating acne in digital images.

This study was therefore designed to explore on the acne assessment measure which, can be used in the evaluation of acne observed from in person visit (face-to-face consult) and in digital images.

The importance of this study is to have standardized system in the grading of acne vulgaris not only during face-to-face consultation but also in digital images that we can be used consistently in clinical practice and research. This is also important to achieve uniformity in grading because this will further help in better disease management and more efficacious treatment. Lastly, the use of digital images is a useful and innovative way to continue delivery of follow-up care to patients despite barriers such as distance and time by determining whether the existing acne assessment measure can also be used in the evaluation of acne observed from digital images.

OBJECTIVES

General Objective

1. To determine the most appropriate acne grading tool to evaluate the acne severity of patients during face-to-face consultations and in digital skin images at the Dermatology Out Patient Department of a Tertiary Government Hospital?

Specific Objectives

1. To determine the demographic profile of the patients diagnosed with acne vulgaris.
2. To determine the most appropriate acne grading tool during face-to-face consultation of acne vulgaris patients.
3. To determine the most appropriate acne grading tool for digital skin images of acne vulgaris patient.
4. To compare the grading based on most appropriate grading tool that is applicable for both face-to-face consultation and digital skin images.

METHODS

This is a cross-sectional prospective study on the appropriate acne-grading tool to assess acne severity in face-to-face consultation and in digital skin images.

A total of eighteen subjects clinically diagnosed with facial acne vulgaris were enrolled in the study. Those who had drug-induced acneiform eruptions and with acne lesions on other body regions (i.e. trunk, back) were not included in the study.

This study was conducted at the East Avenue Medical Center Department of Dermatology – Out Patient Department. Prior to conducting the study, the research was submitted and approved by the Institutional Ethics Review Board.

The primary investigator (PI), enrolled the patient in the study, accomplished the data collection form and have the informed consent forms signed. The digital images of every enrolled subject were captured by the primary investigator using a Canon

Ixus 16.1 megapixel digital camera in digital macro mode without flash. This camera was chosen for its ease of use and high quality image reproduction. The light source was an overhead fluorescent with some natural light through examining room windows.

In the first part of the study, the primary investigator presented the patient diagnosed with acne vulgaris to two senior dermatology residents (Raters A and B) and were graded using Total inflammatory lesion count, LEEDS acne assessment technique, and Investigator's Global Assessment. The grading of two raters were compared to determine the **inter-rater agreement** in grading of acne severity during **in-person visits (face-to-face consultation)**.

In the second part of the study, digital skin images captured during the initial consult of the patient were presented to Raters A and B at a later date (during the 6th and 12th week from the time of recruitment). Photos were evaluated using Total inflammatory lesion count, LEEDS acne assessment technique, and Investigator's Global Assessment. To evaluate the **inter rater agreement for the digital skin images**, the acne grading of Rater A and Rater B, 12 weeks after recruitment, were compared. To evaluate the **intra rater agreement for the digital images**, grading of the digital skin images by Rater A alone and Rater B alone during the 6th and 12th week after recruitment were compared. To evaluate the **intra rater agreement between face-to-face and digital images**, the grading of Rater A alone and Rater B alone at the time of recruitment (face-to-face consult) and the grading of the digital images 12 weeks after were compared (*Figure 1*).

For Total inflammatory lesion count (TILC), raters were asked to count all non-inflammatory and inflammatory lesions from the set of three facial digital images and acne grading was based on a tabulated severity score composed of Mild, Moderate and Severe. The Leeds Technique was done by comparing the patient's acne severity to a standard photographic template and assigning a score from 0 to 12. The Investigator's Global Assessment (IGA) used a validated 6-point rating scale ranging from clear to very severe. Both raters were trained with sets of practice images prior to carrying out their formal assessments. (*Appendix A*)

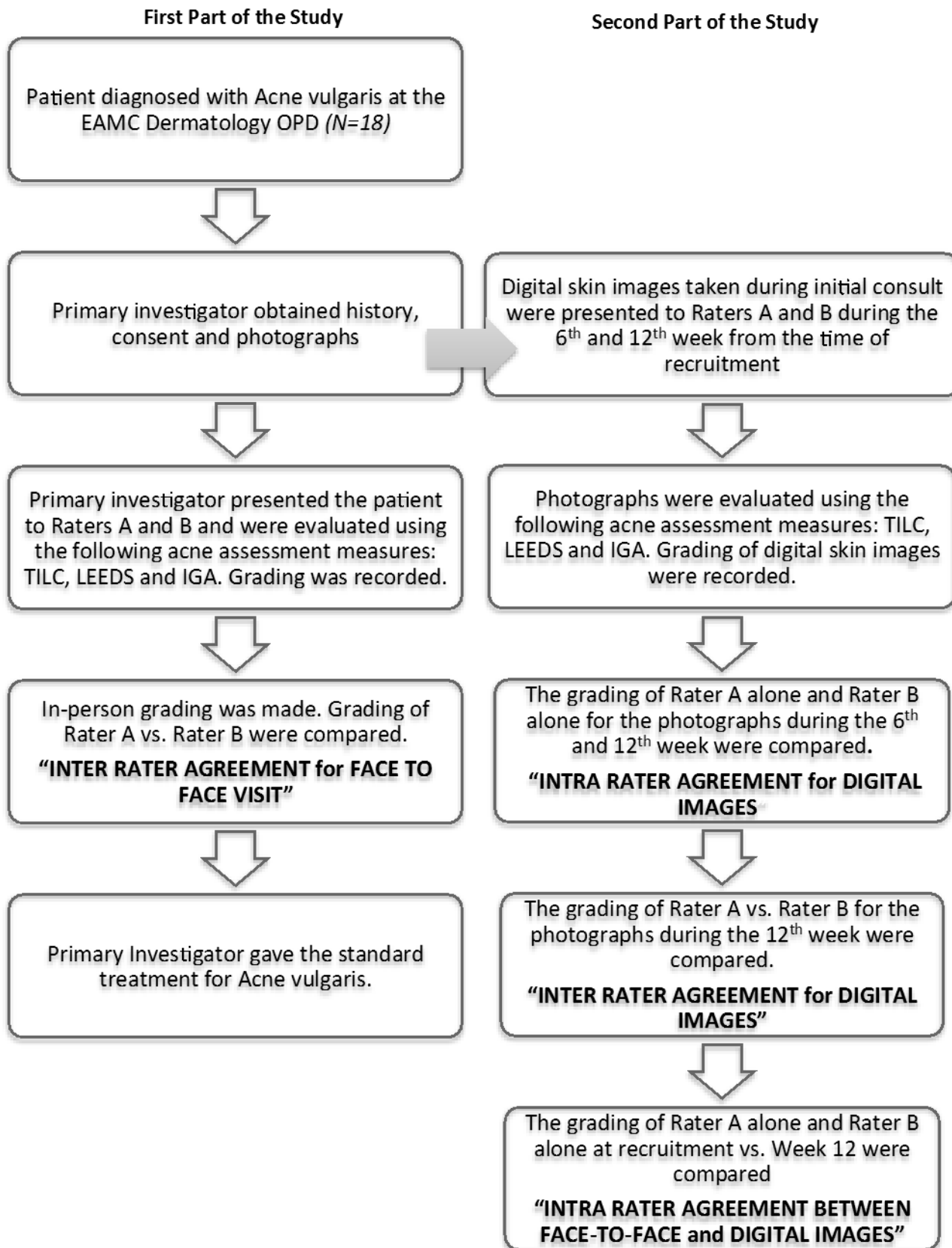


Figure 1. Study Flow Diagram

Statistical Methods

All valid data from 18 evaluable subjects were included in the analysis. Missing values were not replaced or estimated during analysis. Summary statistics were presented in tables or graphs and reported as median (range) for quantitative demographic and clinical characteristics (e.g. age) or n (%) for qualitative measures (e.g. sex, age group). Cohen's kappa was used to measure agreement between evaluations of two raters and between acne grading tools: *Total inflammatory Lesion Count (TILC)*, *Leeds Assessment Score (LEEDS)*, and *Investigator's Global Assessment (IGA)*. Interpretation of kappa was based on the following:

Kappa	Agreement
<0	Less than chance agreement
0.01 – 0.20	Slight agreement
0.21 – 0.40	Fair agreement
0.41 – 0.60	Moderate agreement
0.61 – 0.80	Substantial agreement
0.81 – 0.99	Almost perfect agreement

Source: Landis JR, Koch GG. The measurement of observer agreement for categorical data. *Biometrics* 1977;33:159-74.

Chi-square test was used to compare proportions. Conclusions are based on a 5% level of significance. SPSS v20 was used in data processing and analysis.

RESULTS

A total of 18 subjects aged 14 to 37 years participated in the study. Majority were females belonging to the 10 to 30 years age group ($p = 0.777$; Table 1).

Table 1. Distribution of the study subjects according to age and sex

Age (Years)	Male	Female	All
	n (%)	n (%)	n (%)
10-20	2 (11.1)	6 (33.3)	8 (44.4)
20-30	1 (5.6)	6 (33.3)	7 (38.9)
30-40	1 (5.6)	2 (11.1)	3 (16.7)
All	4 (22.2)	14 (77.8)	18

All subjects had unremarkable findings in the review of systems. Majority had unremarkable past medical history (13, 72.2%) while 3 subjects had allergy (16.7%) on either seafood (2) or chicken (1) and 2 had bronchial asthma (11.1%). Most subjects had family history of acne vulgaris (14, 77.8%) or diabetes (1, 5.6%) while the rest had unremarkable family medical history. Subjects varied from students (10, 55.6%): elementary (3, Grade 9), high school (1), college student (6); employed (6, 33.3%): nurse (1), technical assistant (1), caregiver (1), teacher (1), dental technician (1) and program manager (1) to unemployed (2, 11.1%). Diet was either mixed (16, 88.9%), mostly beef and pork (1, 5.6%) or fatty food (1, 5.6%). Clinical assessments of acne vulgaris were mild (8, 44.4%), moderate (8, 44.4%)

Table 2. Inter rater agreement for face-to-face visit (Rater A vs. Rater B)

Acne Grading Tool	Kappa	Level of Agreement
Investigators Global Assessment	0.559*	Moderate Agreement
Total Inflammatory Lesion Count	0.492*	Moderate Agreement
LEEDS Technique	0.430*	Moderate Agreement

Raters had significant moderate agreement in ratings using the three grading tools during the face-to-face visit (Table 2). Investigator's Global Assessment (IGA) had the highest measure of concordance ($k = 0.559$, $p = 0.000$).

Table 3. Intra rater agreement for digital images (Week 6 vs. Week 12)

Acne Grading Tool	Kappa	p-value	Level of Agreement
Total Inflammatory Lesion Count			
Rater A	0.620*	0.004	Substantial Agreement
Rater B	0.776*	0.000	Substantial Agreement
LEEDS Technique			
Rater A	0.250	0.081	Fair Agreement
Rater B	0.221	0.071	Fair Agreement
Investigator's Global Assessment			
Rater A	0.330	0.069	Fair Agreement
Rater B	0.100	0.502	Slight Agreement

* Significant at 5% level

Ratings on the digital images by each rater during Week 6 and Week 12 assessments had significant substantial agreements based on Total Inflammatory Lesion Count (Table 3). Individual ratings based on LEEDS and Investigator's Global Assessment had fair or slight agreements.

Table 4. Inter rater agreement for digital images at week 12 (Rater A versus Rater B)

Acne Grading Tool	Kappa	p-value	Level of Agreement
Total Inflammatory Lesion Count	0.519*	0.000	Moderate Agreement
LEEDS Technique	0.354*	0.000	Fair Agreement
Investigator's Global Assessment	0.536*	0.000	Moderate Agreement

* Significant at 5% level

Raters had significant moderate agreement in ratings of digital images using Total Inflammatory Lesion Count (TILC) and Investigator's Global Assessment (IGA). Both raters had fair agreement in ratings using LEEDS Technique (Table 4).

Table 5. Intra rater agreement on face-to-face and digital images

Acne Grading Tool	Kappa	p-value	Level of Agreement
RATER A			
Total Inflammatory Lesion Count	0.349	0.060	Fair Agreement
LEEDS Technique	0.000	1.000	Less than Chance Agreement
Investigator's Global Assessment	0.330	0.069	Fair Agreement
RATER B			
Total Inflammatory Lesion Count	0.786*	0.000	Substantial agreement
LEEDS Technique	0.406*	0.003	Moderate agreement
Investigator's Global Assessment	0.411*	0.007	Moderate agreement

* Significant at 5% level

Day 1 and Week 12 ratings of Rater A using either Total Inflammatory Lesion Count (TILC) or Investigator's Global Assessment (IGA) had fair agreement while LEEDS, on the other hand, had the lowest measure of concordance ($k = 0.000$, $p = 1.000$; Table 5). Ratings of Rater B using either Investigator's

Global Assessment or LEEDS, however, had significantly moderate agreements while Total Inflammatory Lesion Count had a significantly substantial agreement. Day 1 and Week 12 ratings using LEEDS had the lowest measure of concordance ($k = 0.406$, $p = 0.003$).

DISCUSSION

Acne vulgaris is a common dermatological condition primarily affecting the vast majority of adolescents and young adults. Although many acne-grading tools have been validated in face-to-face setting, the reliability when used to assess digital images has not been well studied in our setting. This study brings out the most applicable acne-grading tool to assess the acne severity of patients during face-to-face consultations and digital skin images in the Dermatology Out Patient Department of a Tertiary Government Hospital.

Demographics

In this study, majority of patients were females comprising of 77.8% of the study population as also observed in the studies of both Al-Ameer et al¹¹ and Ikaraoha et al.¹² Several studies stated that acne develops earlier in females than in males due to their earlier onset of puberty. The most common involved age group was 10 to 20 years old comprising of 44.4% of the subjects. The prevalence of acne at a given age has been shown to be highly dependent on the degree of sexual maturity.¹³ Acne is a disease primarily of adolescence. It is triggered by the initiation of androgen production by the adrenal glands and gonads, and it usually subsides after the end of growth. However to some degree, acne may persist beyond adolescence in a significant proportion of individuals particularly women.¹⁴

Majority of the subjects had unremarkable past medical history (13, 72.2%). Other past medical conditions reported were allergies to food and bronchial asthma. Most subjects had family history of acne vulgaris (14, 77.8%). A study by Rajar et al¹⁹ found that 50% of adults with acne had a first-degree relative parent, sibling and child who had acne. This suggests, that some people may have a genetic predisposition. In another study, there is some evidence, primarily from twin studies, to suggest that acne may be an

inherited disease.²⁰ There is also a tendency towards severe acne in patients with a positive family history for acne.²¹

In this study most of the subjects were students (55.6%). Other occupations reported were nurse, caregiver, teacher, dental technician and program manager. In a study of Goulden et al²² occupation have been shown not to be significant etiologic factor in the development of acne vulgaris.

Diagnostic Agreement

This study examined whether acne assessment measures validated for face-to-face use, can be used to assess acne lesions captured from digital skin images. Results showed that the inter-rater and intra rater reliability of the dermatologists' evaluations differed based on the acne assessment measures used: Total inflammatory lesion count (TILC), LEEDs acne assessment technique, and Investigator's Global Assessment (IGA).

Inter rater agreement for face-to-face setting

The inter rater agreement for face-to-face setting was used to determine the most consistent acne assessment measure between different raters in evaluating acne vulgaris during in person visits.

Raters had significant moderate agreement in ratings using the three acne grading tools during the face-to-face visit but the Investigator's Global Assessment (IGA) had the highest measure of concordance ($k = 0.559$) followed by Total inflammatory lesion count (TILC), ($k = 0.492$) and lastly, the LEEDS technique ($k = 0.430$). This finding shows that all these acne-grading tools may be applicable during in-person visits but the Investigator's Global Assessment (IGA) may be best used since it had the highest measure of concordance among the three. The Investigator's Global Assessment (IGA) is the physician's over-all or global assessment of the condition proposed by the US FDA in 2005. This grading system recognizes the complexities in severity determination of acne. It involves determining the severity of acne, based on observing the dominant lesions, evaluating the presence or absence of inflammation and estimating the extent of involvement.¹⁵ This is composed

of ordinal scale with six severity grades, each defined by distinct and clinically relevant morphological descriptions that would minimize inter-observer variability. The more detailed descriptive text has resulted in this system being considered to provide even greater reliability than other global assessments.¹⁶

In contrast with the study by Tan et al¹⁷, inter-rater reliability of the acne measures in a face-to-face setting was found to be highest for Total inflammatory lesion count.

Intra rater agreement for digital images (Week 6 vs. Week 12)

The purpose of the intra rater agreement for digital images at week 6 versus week 12 was to determine the most consistent acne-grading tool used by the same rater in evaluating photographs at different times.

Ratings on the digital images by each rater during Week 6 and Week 12 assessments had significant substantial agreements based on Total inflammatory lesion count (TILC) with $k = 0.620$ and $k = 0.776$ measure of concordance for Raters A and B respectively. Meanwhile, individual ratings of the digital skin images based on LEEDS technique and Investigator's Global Assessment (IGA) had fair or slight agreements only (Table 3). Both raters A and B had the highest intra rater reliability in Total Inflammatory Lesion Count (TILC) because in the counting procedure, primary acne lesions are evaluated and accounted for independently thus providing a more objective data in digital images.

In the study of Lucky et al¹⁸ in 1996, the reliability of acne lesion counting was assessed. Total lesion counts along with non-inflammatory and inflammatory lesions were calculated. The study concluded that the reliability of acne lesion counting (TILC) was excellent when performed by the same trained rater over time, which was likewise observed in this study. Another study by Bergman et al³ found out the Total inflammatory lesion count (TILC) to be the most reliable acne assessment measure that can be used to evaluate digital images obtained from subjects with inflammatory acne lesions.

Inter rater agreement for digital images at week 12 (Rater A vs. Rater B)

The inter rater agreement for digital images between two different raters was used to assess which acne-grading tool will have the highest measure of concordance in evaluating digital skin images.

Concordance between two dermatologists receiving photographs alone at Week 12 had significant moderate agreement in ratings of digital images using both Total inflammatory lesion count ($k = 0.519$) and Investigator's Global Assessment ($k = 0.536$) but with only fair agreement in ratings of digital images using LEEDS ($k = 0.354$) (Table 4). This results showed that Total inflammatory lesion count and Investigator's Global Assessment are applicable for grading digital skin images but Total Inflammatory Lesion Count may be best used for evaluating photographs since it had the highest measure of intra-rater agreement (Rater A : $k = 0.620$, Rater B: $k = 0.776$) compared to Investigator's Global Assessment and LEEDS (Table 3).

It was observed in this study that the inter-rater reliability (Table 3) was less than the intra-rater reliability (Table 4) for each assessment tool in evaluating digital skin images, reflecting a disparity in scoring between raters. This underscores the importance of having the same rater evaluate a subject throughout the course of a treatment period or study.³

Intra rater agreement on face-to-face and digital images (Day 1 vs. Week 12)

The intra rater agreement for face-to-face consult and digital images was used to evaluate which acne grading tool will have a higher measure of concordance when used by each individual rater during face-to-face consult and digital skin images.

The ratings of Rater A at Day 1 (face-to-face setting) and Week 12 (digital images) had the highest measure of concordance for Total inflammatory lesion count (TILC) ($k = 0.349$) while LEEDS had the lowest measure of concordance ($k = 0.000$, $p = 1.000$). Ratings of Rater B using Total inflammatory lesion count (TILC) had a significantly substantial

agreement ($k = 0.786$) however had moderate agreements using either Investigator's Global Assessment (IGA) or LEEDS. The ratings using LEEDS technique also had the lowest measure of concordance ($k = 0.406$, $p = 0.003$). Individual raters had higher intra rater reliability using TILC in face-to-face setting and digital skin images.

Several studies have evaluated the use of digital images to make diagnoses and triage patient referrals.^{8,9} A study by Bergman *et al*³ in 2008, determined whether a specific assessment tool designed to grade acne during face-to-face visits could be applied to the evaluation of digital images. It demonstrated that digital images of inflammatory acne lesions could reliably be evaluated using certain clinical assessment tools. In this study the Total Inflammatory Lesion Count was found to be the most reliable acne assessment measure for evaluating digital skin images, which was consistent in the result of this study.

The LEEDS technique consistently had the lowest measure of concordance among the other acne-grading tools. In LEEDS technique each raters were asked to compare the patient's acne severity to a standard photographic manual with an assigned acne severity score. The study of Tan *et al*²³ in 2013 stated that the standard LEEDS image could be inadequate in portraying facial acne grades and cannot accurately represent the spectrum of the acne severity. There is a current need for images that will correspond accurately to a categorical acne scale.²³ Thus, Total inflammatory lesion count (TILC) and Investigator's Global Assessment (IGA) are more objective acne-grading tools in evaluating acne severity.

CONCLUSION

Acne is a very common dermatologic condition that affects individuals around the world. The grading system is one of the main issues because there is no global standardized grading. Additionally, grading is a subjective measure that varies from one dermatologist to another (inter-rater reliability) and it may also vary for the same dermatologist at different times for the same patient (intra rater reliability). This can be attributed to the tedious process of counting lesions in various types of acne.

All the three acne severity tools may be used for evaluating acne severity during face-to-face consultation. The Investigator's global assessment may best be used for face-to-face assessments while the total inflammatory lesion count may best be used for evaluating acne severity in digital skin images.

RECOMMENDATION

This study recommends the use of a combined acne assessment measure, the Investigator's Global Assessment and Total Inflammatory Lesion Count (*Appendix B*) that can allow for a more comprehensive approach to evaluate acne severity from a clinical and investigational application. A uniform and standard acne-grading tool is important to accurately assess acne severity as this influences treatment selection and assessment of response to therapy.

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APPENDIX A

ACNE GRADING TOOLS

I. Total Inflammatory Lesion Count (TILC)

Count all non-inflammatory and inflammatory lesions and grade based on the severity score below:

Severity	Definition
Mild	<20 comedones or <15 inflammatory lesions or <30 total lesions
Moderate	20 to 100 comedones, or 15-50 inflammatory lesions, or 30 to 125 total lesions
Severe	>5 cysts, or total comedone count >100, or total inflammatory lesion count >50 or >125 total lesions

II. LEEDS Technique

Compare the patient's acne severity from the digital images to the standard photographic manual by assigning a score.



III. Investigator's Global Assessment Scale (IGA)

Using a validated 6-point grading scale, rate the patient's acne from clear to very severe.

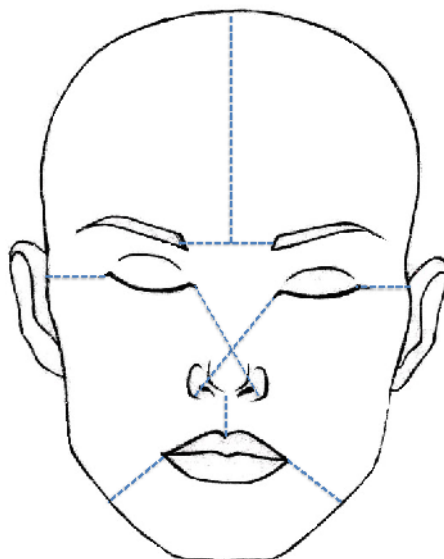
SCORE	GRADE	DESCRIPTION
0	Clear	Normal appearing, clear skin with no evidence of acne vulgaris
1	Almost Clear	Rare non-inflammatory lesions present with rare non-inflamed papules
2	Mild	Some comedones are present with few papules and pustules (no nodules)
3	Moderate	Several to many comedones, papules, pustules: One small nodule may be present
4	Severe	Many comedones, numerous papules and pustules; Few nodules and cysts
5	Very Severe	Highly inflammatory lesions predominate, variable number of comedones, many papules, pustules and many nodulocystic lesions

APPENDIX B RECOMMENDED ACNE GRADING TEMPLATE

Name: _____ Age/Sex: _____ Date: _____

I. TOTAL INFLAMMATORY LESION COUNT

Count all non-inflammatory and inflammatory lesions and give the acne grading based on the severity score below:



Facial Template

	RIGHT FOREHEAD	LEFT FOREHEAD	RIGHT CHEEK	LEFT CHEEK	CHIN	TOTAL NO. OF LESIONS
NON-INFLAMMATORY LESIONS						
Open comedones						
Closed comedones						
INFLAMMATORY LESIONS						
Papules						
Pustules						
Nodules						
Cysts						

SEVERITY	DEFINITION
MILD	<20 comedones or <15 inflammatory lesions or <30 total lesions
MODERATE	20 to 100 comedones or 15-50 inflammatory lesions, or 30 to 125 total lesions
SEVERE	>5 cysts, or Total comedone count >100, or Total inflammatory lesion count >50, or 125 total lesions

ACNE SEVERITY GRADE: _____

II. INVESTIGATOR'S GLOBAL ASSESSMENT (IGA)

Using the 6-point grading scale below, rate the patient's acne from Clear to Very Severe (Score 0 to 5)

SCORE	GRADE	DESCRIPTION
0	Clear	Normal appearing, clear skin with no evidence of acne vulgaris
1	Almost Clear	Rare non-inflammatory lesions present with rare non-inflamed papules
2	Mild	Some comedones are present with few papules and pustules (no nodules)
3	Moderate	Several to many comedones, papules, pustules: One small nodule may be present
4	Severe	Many comedones, numerous papules and pustules; Few nodules and cysts
5	Very Severe	Highly inflammatory lesions predominate, variable number of comedones, many papules, pustules and many nodulocystic lesions

ACNE SEVERITY GRADE: _____