

Original Article



Consensus Report on Truncal Acne: The Korean Acne and Rosacea Society Experts Panel

Joo Yeon Ko ¹, Chang Hwa Song ¹, Kwang Joong Kim ², Nack In Kim ³,
Jung Eun Kim ⁴, Hei Sung Kim ⁵, Young Suck Ro ¹, Kui Young Park ⁶,
Mi-Youn Park ⁷, Dae Hun Suh ⁸, Kihyuck Shin ⁹, Min Kyung Shin ¹⁰,
Hyo Hyun Ahn ¹¹, Woo Jin Lee ¹², Weon Ju Lee ¹³, Ju Hee Lee ¹⁴,
Jee Bum Lee ¹⁵, Hae Woong Lee ¹⁶, Hee Jung Lee ¹⁷, Min Soo Jang ¹⁸,
Seung Hyun Cheong ¹⁹, Soyun Cho ²⁰, Yu Sung Choi ²¹, You Won Choi ²²,
Hoon Choi ²³, Mi Woo Lee ¹²

OPEN ACCESS

Received: Jun 20, 2023

Revised: Jul 19, 2023

Accepted: Aug 7, 2023

Published online: Jan 2, 2024

Corresponding Author:

Mi Woo Lee

Department of Dermatology, Asan Medical
Center, University of Ulsan College of
Medicine, 88 Olympic-ro 43-gil, Songpa-gu,
Seoul 05505, Korea.

Email: miumiu@amc.seoul.kr

© 2024 The Korean Dermatological
Association and The Korean Society for
Investigative Dermatology

This is an Open Access article distributed
under the terms of the Creative Commons
Attribution Non-Commercial License (<https://creativecommons.org/licenses/by-nc/4.0/>)
which permits unrestricted non-commercial
use, distribution, and reproduction in any
medium, provided the original work is properly
cited.

- ¹Department of Dermatology, Hanyang University Hospital, Hanyang University College of Medicine, Seoul, Korea
²Department of Dermatology, Hallym University Hospital, Hallym University College of Medicine, Seoul, Korea
³Kim Nack-In Dermatology Clinic, Seoul, Korea
⁴Department of Dermatology, Soonchunhyang University Cheonan Hospital, Soonchunhyang University College of
Medicine, Cheonan, Korea
⁵Department of Dermatology, Incheon St. Mary's Hospital, College of Medicine, The Catholic University of Korea,
Incheon, Korea
⁶Department of Dermatology, Chung-Ang University Hospital, Chung-Ang University College of Medicine, Seoul,
Korea
⁷Department of Dermatology, National Medical Center, Seoul, Korea
⁸Department of Dermatology, Seoul National University Hospital, Seoul National University College of Medicine,
Seoul, Korea
⁹Department of Dermatology, Pusan National University Yangsan Hospital, Pusan University College of Medicine,
Yangsan, Korea
¹⁰Department of Dermatology, Kyung Hee University Medical Center, Kyung Hee University College of Medicine,
Seoul, Korea
¹¹Department of Dermatology, Korea University Anam Hospital, Korea University College of Medicine, Seoul, Korea
¹²Department of Dermatology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea
¹³Department of Dermatology, Kyungpook National University School of Medicine, Daegu, Korea
¹⁴Department of Dermatology, Severance Hospital, Yonsei University College of Medicine, Seoul, Korea
¹⁵Department of Dermatology, Chonnam National University Hospital, Chonnam University College of Medicine,
Gwangju, Korea
¹⁶Louis Dermatologic Clinic, Guri, Korea
¹⁷Department of Dermatology, CHA Bundang Medical Center, CHA University School of Medicine, Seongnam, Korea
¹⁸Department of Dermatology, Kosin University Gospel Hospital, Kosin University College of Medicine, Busan, Korea
¹⁹Department of Dermatology, Konyang University Hospital, Konyang University College of Medicine, Daejeon, Korea
²⁰Department of Dermatology, Seoul Metropolitan Government - Seoul National University Boramae Medical
Center, Seoul National University College of Medicine, Seoul, Korea
²¹Department of Dermatology, Soonchunhyang University Seoul Hospital, Soonchunhyang University College of
Medicine, Seoul, Korea
²²Department of Dermatology, Ehwa Womans University Medical Center, Ehwa Womans University College of
Medicine, Seoul, Korea
²³Department of Dermatology, Chosun University Hospital, Chosun University College of Medicine, Gwangju, Korea

ABSTRACT

Background: More than half of acne patients have truncal acne on their chest, back, and shoulders. However, since most studies on acne have focused on the face, data on clinical characteristics and proper management for truncal acne are insufficient.

Objective: To establish a Korean Acne Rosacea Society (KARS) consensus for experts' perception and treatment patterns of truncal acne.

Methods: We conducted two rounds of the Delphi technique to gather expert opinion and reach a consensus on truncal acne. The first round comprised 48 questionnaires focusing on various aspects such as epidemiology, clinical features, diagnosis, treatment, prognosis and more, while second rounds consisted of 26 questionnaires.

Results: A total of 36 dermatologists (36/38 KARS members, 94.7%) completed this survey. In the first-round survey, consensus was reached on 20 out of the 48 questions (41.7%). In the second-round questionnaire, consensus was achieved on 9 of the 26 questions (34.6%). The most unresponsive lesion to truncal acne treatment was scars (atrophic/hypertrophic). The most commonly used treatments for each non-inflammatory and inflammatory truncal acne lesions were selected to use topical retinoids (78.1% of the responders) and oral antibiotics (93.8% of the responders).

Conclusion: Our study has yielded valuable insights into the epidemiology, clinical manifestations, diagnosis, treatment, and quality of life of patients with truncal acne. We anticipate that this study will inspire further comprehensive research for individuals with truncal acne.

Keywords: Acne

INTRODUCTION

Acne vulgaris is a prevalent skin disease, particularly among young people, with over 90% of men and 80% of women affected by the age of 21¹. More than half of acne patients have truncal acne on their chest, back, and shoulders. However, about one or two in four patients with involvement in both facial and truncal acne do not voluntarily report the presence of truncal acne as part of their complaints².

Since most studies on acne have focused on the face, data on clinical presentations and management for truncal acne are insufficient in the literature³. Although facial acne and truncal acne are thought to have a similar pathogenic process and can be diagnosed and treated similarly, differentiated study is necessary due to differences in epidemiology, severity, and differential diagnosis. Additionally, practical management of truncal acne may differ from the facial area.

Trifarotene 0.005% cream is a fourth-generation topical retinoid. In October 2019, the U.S. Food and Drug Administration labeled it for acne treatment in patients aged 9 or older, increasing the need for specialized therapeutic approaches to truncal⁴.

Prior to the introduction of trifarotene in the Korean market, the Korean Acne Rosacea Society conducted a survey to understand experts' perceptions of truncal acne and how treatment was actually being performed.

MATERIALS AND METHODS

Delphi methodology

Through online and offline meetings of the Korean Acne and Rosacea Society, 38 dermatologists discussed the nature of truncal acne, including its pathophysiology, diagnosis/differential diagnosis, severity evaluation, and management strategies that would be useful for clinicians treating truncal acne.

We applied the Delphi technique to achieve consensus on truncal acne. The advantage of the Delphi method is that participants have the opportunity to rate the importance of each statement regarding the core domains and participate in this process anonymously and independently. The panel comprised 38 dermatologists who were all members of the Korean Acne and Rosacea Society. Responses were anonymized to decrease bias. A series of sequential iterations allowed for the revision of judgments based on peer review to achieve consensus where possible.

An online questionnaire was developed by a selected group of the Korean Acne and Rosacea Society and distributed to panel members. Participants were asked to rate their agreement with each statement on a 9-point Likert scale. A score of 1 indicated that the statement was not important enough to be considered in the consensus, considered in the consensus, while a score of 9 indicated that the statement was critical and should be included in the consensus. The Delphi method with 9-point Likert rating scales was used to create the consensus criteria. Participants assigned each statement an agreement score between 1 (lowest) and 9 (highest), and these scores were collated into one of three ranges: 1–3, 4–6, and 7–9. The level of agreement was indicated by the percentage of individuals scoring within the 7–9 range. If 70% or more of individuals scored a statement within the 7–9 range, it was recorded as agreement. Responses from the first survey were classified as round 1, and the results were sent to the panel along with a revised set of survey questions (round 2). Results from the rounds 1 and 2 were collected and analyzed to produce the final results. Consensus was defined as agreement among 70% or more of the dermatologists who participated in the panel and completed the survey.

RESULTS

Demographic information of the expert panel

A total of 36 dermatologists (94.7%) completed this survey (Table 1). Twenty-two (61.1%) participants were men, and 15 (41.7%) were in their fifth decade, while 11 (30.6%) were in sixth decade. There are four participants in their 30s and 60s each. Nine (25.0%) participants were primary hospital doctors, 7 (19.4%) were in secondary hospital doctors, and 20 (55.6%) were tertiary hospital doctors.

Table 1. Expert panel demographic information

Characteristics	Values
Total	36 (100.0)
Sex	
Male	22 (61.1)
Female	14 (38.9)
Age (yr)	
30–39	4 (11.1)
40–49	15 (41.7)
50–59	11 (30.6)
60–69	4 (11.1)
≥70–	2 (5.6)
Hospital	
Primary	9 (25.0)
Secondary	7 (19.4)
Tertiary	20 (55.6)
Average daily numbers of acne patients	
<5	1 (2.8)
5–9	16 (44.4)
10–19	15 (41.7)
20–29	3 (8.3)
≥30	1 (2.8)
Years since dermatology board certification	
<5	1 (2.8)
5–9	3 (8.3)
10–19	15 (41.7)
20–29	10 (27.8)
≥30	7 (19.4)

Values are presented as number (%).

The daily number of patients with facial/truncal acne visiting their clinics was follows: below 5 (1, 2.8%), 5–9 (16, 44.4%), 10–19 (15, 41.7%), 20–29 (3, 8.3%), and above 29 (1, 2.8%). The years after dermatology board certification were 10–19 (15, 41.7%), 20–29 (10, 27.8%), and above 29 (7, 19.4%).

Epidemiology and clinical manifestations of truncal acne

Consensus was achieved on epidemiology and clinical manifestations of truncal acne. Consensus was reached on 2 out of 8 questions (Table 2). In another two questions, 69.4% of responders scored between 7- and 9-point.

Table 2. Panel consensus for epidemiology and clinical manifestations of truncal acne

Statement	7–9 point (%)
The diagnosis and treatment of truncal acne by physicians are less common compared to facial acne.	91.7
Truncal acne is less common than facial acne.	63.9
Truncal acne is more common in males than females.	55.6
The age of onset of truncal acne is later than that of facial acne.	69.4
In truncal acne, inflammatory lesions are the main type, rather than non-inflammatory lesions.	72.2
Truncal acne occurs more commonly on the back than the chest.	69.4
The duration of acne in truncal areas is longer compared to facial acne.	47.2
The etiology (pathophysiology) of truncal acne is similar to that of facial acne.	58.3

1. The diagnosis and treatment of truncal acne by physician are less common compared to facial acne (agreement: 91.7%). Although truncal acne can leave scars, and affect self-esteem and body image, it is often overlooked in dermatology practice. To date, the effect on self-esteem in patients with truncal acne has not been evaluated. Patients require additional physical examination, such as removing clothing, compared to facial acne where the trunk is directly visible.
2. In truncal acne, inflammatory lesions are the main type rather than non-inflammatory lesions (agreement: 72.2%). Truncal acne is more affected by body secretions, especially sweat, than on face, and it can be thought that there are many inflammatory lesions because it persists in a closed environment such as wearing clothes.
3. The age of onset of truncal acne is later than that of facial acne (agreement: 69.4%).
4. Truncal acne occurs more commonly on the back than the chest (agreement: 69.4%).

Diagnosis and severity evaluation

Consensus was reached on the diagnosis and severity of truncal acne. Agreement was reached on 8 out of 16 questions (Table 3).

- Bacterial folliculitis is a major disease that requires differentiation from truncal acne (agreement: 72.2%).
- Malassezia folliculitis is a major disease that needs to be differentiated from truncal acne (agreement: 86.1%).

Infectious folliculitis such as bacterial folliculitis or Malassezia (Pityrosporum) folliculitis is often misdiagnosed as acne vulgaris, with monomorphic papules and pustules appearing on the chest, back.

- Acneiform eruptions are a major disease that requires differentiation from truncal acne (agreement: 75.0%).

Acneiform eruptions can be developed due to various causes, including contact with chemicals, infections, hormones, and drugs such as corticosteroids. Acneiform eruptions resemble acne and pityrosporum/bacterial folliculitis characterized by papules and pustules.

- It would be helpful if a system for assessing the severity of truncal acne, such as the Korean Acne Grading System, were developed using reference photos (agreement: 77.8%).
- The area of involvement is an important factor when assessing the severity of truncal acne (agreement: 77.8%).
- The number of inflammatory lesions is an important factor when assessing the severity of truncal acne (agreement: 88.9%).
- The number of cystic and nodular inflammatory lesions is an important factor when assessing the severity of truncal acne (agreement: 91.7%).

- The presence or absence of atrophic or hypertrophic scarring is an important factor in evaluating the severity of truncal acne (agreement: 72.2%).

Treatment

Consensus was reached on the treatment of truncal acne. Consensus was achieved in 7 of 13 questions (Table 4). In another question, 69.4% of responders scored between 7 and 9 points.

- It is important to establish the presence or absence of truncal acne when treating facial acne (agreement: 88.9%).
- The presence or absence of truncal acne affects the treatment strategy for facial acne (agreement: 80.6%). Even if the severity of facial acne is mild, if the severity of truncal acne is severe, the treatment agent should be changed.
- The treatment of truncal acne is more complex than facial acne (agreement: 75.0%).
- The different physiological characteristic of the body com-

pared to the face is the reason for the low treatment response in truncal acne (agreement: 72.2%).

- Many patients with truncal acne often neglect treatment, but early treatment can increase the success rate of truncal acne treatment (agreement: 91.7%).
- Oral medications (antibiotics, isotretinoin) are preferred for the treatment of moderate to severe truncal acne because it is difficult to control with topical anti-acne agents alone (agreement: 94.4%).
- The current acne treatment guidelines focus on facial acne, so there is a need for differentiated guidelines for truncal acne (agreement: 86.1%).
- The therapeutic response to truncal acne treatment is poor due to truncal acne’s problematic location on the body which causes difficulties when applying localized treatments such as topical and laser treatments (agreement: 69.4%).

In the case of truncal acne, the range that needs to be treated is

Table 3. Panel consensus for diagnosis and severity assessment of truncal acne

Statement	7-9 point (%)
Truncal acne occurs in patients with facial acne.	13.9
Truncal acne can be diagnosed based on clinical presentation.	47.2
Bacterial folliculitis is a major disease that requires differentiation from truncal acne.	72.2
Malassezia folliculitis is a major disease that requires differentiation from truncal acne.	86.1
Seborrheic dermatitis is a major disease that requires differentiation from truncal acne.	38.9
Acneiform eruptions are a major disease that requires differentiation from truncal acne.	75.0
Severity classification is essential for the treatment and prognosis of truncal acne.	66.7
The severity of facial acne is related to the severity of truncal acne.	63.9
The severity of truncal acne is more severe than that of facial acne.	19.4
We believe that the existing severity grading system for truncal acne is well-developed.	13.9
It would be helpful if a system for assessing the severity of truncal acne, such as the Korean Acne Grading System (KAGS), were developed using reference photos.	77.8
The area of involvement is an important factor in evaluating the severity of truncal acne.	77.8
Comedone is an important factor in evaluating the severity of truncal acne.	44.4
The number of inflammatory lesions is an important factor in evaluating the severity of truncal acne.	88.9
The number of cystic and nodular inflammatory lesions is an important factor for evaluating the severity of truncal acne.	91.7
The presence or absence of atrophic or hypertrophic scarring is an important factor in evaluating the severity of truncal acne.	72.2

Table 4. Panel consensus for the treatment of truncal acne

Statement	7-9 point (%)
It is important to check for the presence of truncal acne when treating facial acne.	88.9
The presence or absence of truncal acne affects the treatment strategy for facial acne.	80.6
The treatment of truncal acne is more complex than facial acne.	75.0
The poor treatment response of truncal acne is often due to low adherence with treatment regimen by patients.	61.1
The poor treatment response of truncal acne is often due to delayed initiation of treatment.	55.6
The difficulty in applying localized treatments such as topical agent (an out-of-reach area, large amount, etc.) or laser therapy (a relatively large area, high cost, etc.) is the reason for the low treatment response in truncal acne.	69.4
The different physiological characteristics of the body compared to the face is the reason for the low treatment response in truncal acne.	72.2
It is believed that the effect of topical anti-acne agents currently available in the market is limited in the treatment of truncal acne compared to facial acne.	66.7
Many patients with truncal acne often neglect treatment, but early treatment can increase the success rate of truncal acne treatment.	91.7
Oral medication (antibiotics, isotretinoin) is preferred for moderate to severe truncal acne because it is difficult to control with topical anti-acne agents alone.	94.4
Higher cumulative doses of oral isotretinoin should be used in truncal acne compared to facial acne.	50.0
The current acne guidelines focus on facial acne, so there is a need for differentiated guidelines for truncal acne treatment.	86.1
Selecting and using appropriate skincare products is important in the treatment of truncal acne.	55.6

wider than that of the face, so there is a limit to the medical procedures or treatments that can be used, and there is a high possibility that the patient will not be able to apply topical agents properly.

Additionally, the most unresponsive lesion of truncal acne was acne scars, including atrophic, hypertrophic scars, and keloids. More than 70% of panelists agreed with this opinion (**Supplementary Table 1**). The most prognostic indicator of truncal acne treatment was a decrease in inflammatory lesions (**Supplementary Table 2**). The majority of the opinions related to management of non-inflammatory lesions of truncal acne favored topical retinoids (78.1%) followed by oral isotretinoin (68.8%), topical benzoyl peroxide (BPO; 43.8%), and medical procedures (extraction, peeling, etc., 43.8%) (**Supplementary Table 3**). The majority of opinions related to management of inflammatory lesions of truncal acne favored oral antibiotics (93.8%), followed by topical BPO (75.0%), oral isotretinoin (71.9%), and topical antibiotics (71.9%) (**Supplementary Table 4**). The majority of opinions related to management of truncal acne scars was laser treatment (78.1%), followed by topical retinoids (46.9%), oral isotretinoin (34.4%), and medical procedures (34.4%) (**Supplementary Table 5**). The majority of opinions related to management of postinflammatory hyperpigmentation after truncal acne favored laser treatment (68.8%), followed by topical retinoids (56.3%), and medical procedures (34.4%) (**Supplementary Table 6**).

Prognosis and quality of life (QoL)

Consensus was achieved on the prognosis and QoL of truncal acne in relation to prognostic indicators. Consensus was achieved on 3 of 10 questions (**Table 5**).

- It is necessary to evaluate the QoL of patients with truncal acne (agreement: 88.9%).

Facial and truncal acne have a critical impact on emotional well-being and daily activities. The additional impact of truncal acne on QoL means that early and effective treatment is significant in managing disease-related psychosocial risks.

- Truncal acne is likely to have a different effect on QoL depending on the season. QoL is more likely to be affected in summer, when there is more exposure, compared to winter (agreement: 91.7%).

Patients experience less suffering in winter than in summer when wearing T-shirts or swimsuits. Therefore, seasonal QoL effects may lead to seasonal complaints and eventually to seasonal management.

- Compared to facial acne, truncal acne occurs in unexposed areas, which may reduce physicians' continuous interest and treatment follow-up (agreement: 97.2%).

Second round questionnaire

Consensus was achieved on 9 of the 26 questions in the second-round questionnaire (**Table 6**). The questions with the highest level of consent (based on the percentage consensus) are listed below.

Scarring (hypertrophic, atrophic or keloid scars) is the type of acne lesion with the lowest treatment response among various truncal acne lesions (88.9% consensus); currently available topical medications in Korea have limited effectiveness for treating truncal acne due to the wide range of lesions and difficulty in accessing the affected areas compared to facial acne (86.1% consensus); the choice of medication for treating truncal acne depends on whether the main lesion is inflammatory or non-inflammatory (83.3% consensus); topical retinoid therapy is effective for treating mild truncal acne with mainly non-inflammatory lesions (80.6% consensus); the most important indicator of treatment response for truncal acne is a decrease in the number of inflammatory lesions (80.6% consensus); when acne occurs on both the face and trunk, the patient's QoL tends to be lower compared to when acne occurs only on the face (77.8% consensus); the likelihood of developing hypertrophic scars or keloids after inflammatory lesions is higher with truncal acne compared to facial acne (77.8% consensus); current assessments of QoL re-

Table 5. Panel consensus for prognosis and quality of life of truncal acne

Statement	7-9 point (%)
Evaluation of the quality of life in patients with truncal acne is necessary.	88.9
The impact of truncal acne on the quality of life is equivalent to that of facial acne.	27.8
Assessment of the quality of life in patients with truncal acne is commonly performed.	5.6
Patients with facial acne and truncal acne require different tools for the assessment of the quality of life.	66.7
Currently, the evaluation tools for quality of life related to acne mainly focus on facial acne and may not adequately reflect the impact of truncal acne on the quality of life.	66.7
There is a high possibility that the impact of truncal acne on quality of life varies according to season. In other words, the decrease in quality of life due to truncal acne during the summer, when there is more exposure, may be greater than during the winter.	91.7
Truncal acne occurs in non-exposed areas compared to facial acne, which may result in less continuous attention and treatment.	97.2
The incidence of scarring is higher in truncal acne compared to facial acne.	61.1
The overall risk of recurrence of acne is higher in the presence of truncal acne.	61.1
The risk of post-inflammatory hyperpigmentation is higher and lasts longer in truncal acne compared to facial acne.	66.7

Table 6. Second round questionnaire

Statement	7–9 point (%)
The frequency of facial acne and truncal acne is similar.	13.9
There is no difference in the frequency of truncal acne between males and females.	25.0
The duration of illness for facial acne and truncal acne is similar.	16.7
The etiology of truncal acne differs somewhat from that of facial acne.	66.7
The severity of truncal acne is proportional to the severity of facial acne.	27.8
Bacterial cultures are commonly performed to differentiate between truncal acne and bacterial folliculitis.	5.6
KOH or fungal cultures are commonly performed to differentiate between truncal acne and <i>Malassezia</i> (pityrosporum) folliculitis.	33.3
With sufficient medical history, including medication use, and clinical findings, it is possible to distinguish between truncal acne and acneiform rashes.	58.3
The number of cotton pads used is an important factor in evaluating the severity of truncal acne.	38.9
Currently available topical medications in Korea have limited effectiveness for treating truncal acne due to the wide range of lesions and difficulty in accessing the affected areas compared to facial acne.	86.1
The choice of medication for treating truncal acne depends on whether the main lesion is inflammatory or non-inflammatory.	83.3
Topical retinoid therapy is effective for treating mild truncal acne with mainly non-inflammatory lesions.	80.6
Topical antibiotic therapy is effective for treating mild truncal acne with mainly inflammatory lesions.	72.2
The most important indicator of treatment response for truncal acne is a decrease in the number of inflammatory lesions.	80.6
When truncal acne occurs simultaneously with facial acne, a higher cumulative dose of isotretinoin is required for treatment compared to when facial acne alone is present.	58.3
Scarring (hypertrophic, atrophic or keloid scars) is the type of acne lesion with the lowest treatment response among various truncal acne lesions.	88.9
Laser treatment is effective for post-inflammatory hyperpigmentation that occurs after truncal acne.	33.3
Topical retinoid treatment is effective for post-inflammatory hyperpigmentation that occurs after truncal acne.	44.4
It is recommended to use a whitening agent containing 4% hydroquinone for post-inflammatory hyperpigmentation after truncal acne.	16.7
The impact of truncal acne on a patient's quality of life is lower compared to facial acne.	50.0
When acne occurs on both the face and trunk, the patient's quality of life tends to be lower compared to when acne occurs only on the face.	77.8
Current assessments of quality of life related to acne (items 1–6) are mainly focused on facial acne and do not adequately reflect the impact of truncal acne on quality of life.	75.0
The degree of scarring from truncal acne is not significantly different from that of facial acne.	13.9
The frequency of acne recurrence is higher when truncal acne is present.	52.8
The risk of post-inflammatory hyperpigmentation after truncal acne is higher compared to facial acne.	50.0
The likelihood of developing hypertrophic scars or keloids after inflammatory lesions is higher with truncal acne compared to facial acne.	77.8

lated to acne (items 1–6) are mainly focused on facial acne and do not adequately reflect the impact of truncal acne on QoL (75.0% consensus); topical antibiotic therapy is effective for treating mild truncal acne with mainly inflammatory lesions (72.2% consensus).

DISCUSSION

Compared to facial acne, there is still a lack of understanding of truncal acne. About half of participants disagreed with our questionnaire on the epidemiology and clinical manifestations of truncal acne. Facial acne and truncal acne are thought to have similar pathophysiology, involving follicular hyperkeratinization and dyskeratinization, excessive sebum secretion, colonization of cutibacterium acnes, and inflammations. However, Kim et al.⁵ found that the truncal area had lower sebum secretion levels than the facial sites and there was no significant correlation between sebum secretion and acne lesions on the body. This suggests that pathogenic factors other than sebum may have a predominant role in the development of truncal acne. Our survey also disagreed with the question of whether the etiology (pathophysiology) of truncal acne

is similar to that of facial acne. Therefore, it seems that further research on this topic should be conducted in the future.

Due to the lack of clinical evidence regarding acne treatment and the absence of any mention in clinical practice guidelines^{6,7}, practical recommendations on acne management need to be provided to dermatologists and other clinicians who treat acne. The panel confirmed that it is important to check truncal acne when treating patients with acne; however, they agreed that physicians tend to diagnose truncal acne less often. This corresponds to the perception that truncal acne occurs less frequently than facial acne. Few clinical studies have evaluated the efficacy and safety of various local and systemic treatments for truncal acne. Topical retinoids, BPO, topical erythromycin, clindamycin, nadifloxacin, or antibiotics, and topical azelaic acid are available topical agents for acne^{8,13}. Systemic treatments include oral isotretinoin^{14,15}, oral antibiotics such as doxycycline^{16,17} and minocycline^{18,19}, and oral spironolactone^{20,21}. Maintenance treatment in acne patients, particularly those using topical agents, is often challenging due to patient preferences for the vehicles used for topical treatment, which is a major cause of treatment failure^{7,22}. Despite efforts to treat truncal acne, successful treatment remains problematic

due to the large body surface area involved, potential difficulties in applying topical agents, bleaching of clothing from BPO, and treatment costs⁶. In the absence of sufficient high-quality evidence or clinical guidelines, the panel confirmed various treatment methods for both inflammatory and non-inflammatory acne lesions, scars, and post-inflammatory hyperpigmentation (PIH). Generally, cosmeceuticals containing exfoliants or antioxidants^{23,24}, Q-switched Nd:YAG lasers²⁵⁻²⁷, intense pulsed light^{28,29}, and iontophoresis are all useful methods for PIH³⁰, while resurfacing, lifting, excision, or other therapies may be applied for atrophic scars³⁰⁻³². The use of vascular lasers, such as 585 nm, 595 nm pulsed dye laser, intralesional triamcinolone, or bleomycin, may be effective in treating hypertrophic scars and keloids³⁰⁻³². However, these methods are not very applicable for treating truncal acne. The panel agreed that truncal acne is difficult to treat with methods such as laser or topical treatments, and the effect of topical medications developed so far on truncal acne is limited compared to facial acne. Even if truncal acne is not easily exposed, the best treatment would be to prevent scars and PIH through rapid treatment. The panel revealed that topical retinoids are the most preferred treatments for non-inflammatory acne lesions, which means that better application methods and vehicles for topical treatments are necessary. A case series of four patients with truncal acne treated with tretinoin lotion 0.05% and azelaic acid foam showed successful treatment results³³. In a pilot study spanning 16 weeks, once daily topical application of dapson 7.5% gel showed promising results in treating truncal acne. The study reported a 55% improvement in the Investigator's Global Assessment (IGA) grade among patients, with 45% of them achieving clear or almost clear by the end of the study (week 16)¹¹. Additionally, a long-term study of spanning 52 weeks evaluated the safety and efficacy of trifarotene, a first-in-class selective RAR- γ agonist. The study found that a daily application of a 50 μ g/g cream of trifarotene was well tolerated, and effective for patients with moderate truncal acne, with continuous improvement observed over time^{4,34,35}. However, the panel revealed that in case of moderate to severe truncal acne, oral medications such as isotretinoin and antibiotics are preferred. Combined topical and systemic treatment is thought to be more effective than topical treatment alone, suggesting that there are still limitations of topical treatment.

The recommendations serve as a foundation for developing guidelines and can aid in improving care for truncal acne patients by increasing attention during consultations. Dermatologists should take the lead in educating other physicians about treatment strategies, as acne is a prevalent disease. Treatment methods continue to improve and develop, and the role of treatment agents is also changing. Given the critical issue of antibiotic resistance, reducing antibiotic use is necessary. Topical or oral retinoids should

be the cornerstone of treatment as they can reduce antibiotic use and target microcomedone, a non-inflammatory lesion. Keloidal and hypertrophic scars are more frequent on the trunk, particularly on the shoulders and upper chest. Patients may place less importance on or completely disregard a scar on the trunk compared to one on the face, which could delay early treatment.

Tan et al.³⁶ found that the combination of facial and truncal acne has a greater impact on QoL than facial acne alone. Regardless of the severity of facial acne, the severity of truncal acne was found to have a greater negative impact on self-esteem, indicating that the visibility of facial acne was not the only factor in the psychological and social distress associated with acne³⁶. Adolescents with truncal acne also reported avoiding swimming or other sports activities and experiencing negative impacts on their schoolwork. Truncal acne patients are also more likely to be affected by seasonal changes, with a lower QoL during summer when they wear T-shirts or swimsuits. In this case, seasonal treatment may be preferred as failure to evaluate and treat truncal acne during the summer months may lead to the worsening of the lesions and the development of physical scars⁶. The panels agreed that there was a seasonal difference, with summer having a lower QoL due to increased exposure. This study highlights the need for improved care for truncal acne patients to reduce the burden of acne.

Most of panel members agreed that evaluating the QoL of patients with truncal acne is necessary, and that a different evaluation method should be used for truncal acne compared to facial acne. Currently, clinical guidelines do not provide advice on how to evaluate or grade truncal acne, and in the absence of a gold standard for evaluation, most physicians or dermatologists may use the IGA, such as "mild," "moderate," or "severe," focusing on primary lesions^{37,38}. However, several studies have shown that clinicians' ratings for the severity of the disease do not always correlate with patient QoL. Therefore, it is now widely accepted that a complete evaluation of truncal acne should not be limited to clinician-based measurements, but rather should include patient-reported QoL and the severity perceived by the patient³⁹⁻⁴¹.

A major limitation of our survey is that the group of expert dermatologists was likely to see more severe cases of facial or truncal acne patients and/or those who are more burdened by it.

In conclusion, our Delphi method, conducted by Korean acne experts, provided valuable insights into the epidemiology, clinical manifestations, diagnosis, treatment, and QoL of patients with truncal acne. The survey revealed some discrepancies in expert opinions and highlighted the need for future research on this topic. We hope that this study will contribute to improving the care and QoL of truncal acne patients and will inspire more in-depth research in the field.

ORCID iDs

Joo Yeon Ko 
<https://orcid.org/0000-0003-4240-9675>
 Chang Hwa Song 
<https://orcid.org/0000-0001-9965-9304>
 Kwang Joong Kim 
<https://orcid.org/0000-0003-4158-6100>
 Nack In Kim 
<https://orcid.org/0000-0002-4810-7013>
 Jung Eun Kim 
<https://orcid.org/0000-0002-8399-8456>
 Hei Sung Kim 
<https://orcid.org/0000-0003-0576-0474>
 Young Suck Ro 
<https://orcid.org/0000-0002-9642-5083>
 Kui Young Park 
<https://orcid.org/0000-0001-5965-1754>
 Mi-Youn Park 
<https://orcid.org/0000-0002-1824-8309>
 Dae Hun Suh 
<https://orcid.org/0000-0002-3371-7505>
 Kihyuck Shin 
<https://orcid.org/0000-0001-8955-9828>
 Min Kyung Shin 
<https://orcid.org/0000-0001-9834-7931>
 Hyo Hyun Ahn 
<https://orcid.org/0000-0002-1129-5305>
 Woo Jin Lee 
<https://orcid.org/0000-0002-0549-464X>
 Weon Ju Lee 
<https://orcid.org/0000-0001-5708-1305>
 Ju Hee Lee 
<https://orcid.org/0000-0002-1739-5956>
 Jee Bum Lee 
<https://orcid.org/0000-0002-1477-4037>
 Hae Woong Lee 
<https://orcid.org/0000-0003-0721-344X>
 Hee Jung Lee 
<https://orcid.org/0000-0001-9140-9677>
 Min Soo Jang 
<https://orcid.org/0000-0002-5686-0830>
 Seung Hyun Cheong 
<https://orcid.org/0000-0001-8443-724X>
 Soyun Cho 
<https://orcid.org/0000-0003-2468-485X>
 Yu Sung Choi 
<https://orcid.org/0000-0001-8308-4091>
 You Won Choi 
<https://orcid.org/0000-0001-6315-3889>
 Hoon Choi 
<https://orcid.org/0000-0001-8514-3550>
 Mi Woo Lee 
<https://orcid.org/0000-0003-4669-9454>

FUNDING SOURCE

Financial support for this study was provided by Galderma.

CONFLICTS OF INTEREST

The authors declare the potential conflicts of interest, including a financial relation with Galderma.

DATA SHARING STATEMENT

The data that supports the findings of this study are available in the supplementary material of this article.

SUPPLEMENTARY MATERIALS**Supplementary Table 1**

The most unresponsive lesion to truncal acne treatment

Supplementary Table 2

Key indicators to consider when evaluating truncal acne treatment response

Supplementary Table 3

Management of non-inflammatory truncal acne

Supplementary Table 4

Management of inflammatory truncal acne

Supplementary Table 5

Management of truncal acne scars

Supplementary Table 6

Management of post-inflammatory erythema/hyperpigmentation after truncal acne

REFERENCES

1. Smithard A, Glazebrook C, Williams HC. Acne prevalence, knowledge about acne and psychological morbidity in mid-adolescence: a community-based study. *Br J Dermatol* 2001;145:274-279. [PUBMED](#) | [CROSSREF](#)
2. Del Rosso JQ, Bikowski JB, Baum E, Smith J, Hawkes S, Benes V, et al. A closer look at truncal acne vulgaris: prevalence, severity, and clinical significance. *J Drugs Dermatol* 2007;6:597-600. [PUBMED](#)
3. Del Rosso JQ, Stein-Gold L, Lynde C, Tangheiti E, Alexis AF. Truncal acne: a neglected entity. *J Drugs Dermatol* 2019;18:205-208. [PUBMED](#)
4. Bell KA, Brumfiel CM, Haidari W, Boger L. Trifarotene for the treatment of facial and truncal acne. *Ann Pharmacother* 2021;55:111-116. [PUBMED](#) | [CROSSREF](#)
5. Kim BR, Chun MY, Kim SA, Youn SW. Sebum secretion of the trunk and the development of truncal acne in women: do truncal acne and sebum affect each other? *Dermatology* 2015;231:87-93. [PUBMED](#) | [CROSSREF](#)
6. Poli F, Auffret N, Leccia MT, Claudel JP, Dréno B. Truncal acne, what do we know? *J Eur Acad Dermatol Venereol* 2020;34:2241-2246. [PUBMED](#) | [CROSSREF](#)

7. Tan J, Alexis A, Baldwin H, Beissert S, Bettoli V, Del Rosso J, et al. Gaps and recommendations for clinical management of truncal acne from the personalising acne: consensus of experts panel. *JAAD Int* 2021;5:33-40. [PUBMED](#) | [CROSSREF](#)
8. Leyden JJ. Efficacy of benzoyl peroxide (5.3%) emollient foam and benzoyl peroxide (8%) wash in reducing *Propionibacterium* acnes on the back. *J Drugs Dermatol* 2010;9:622-625. [PUBMED](#)
9. Palli MB, Reyes-Habito CM, Lima XT, Kimball AB. A single-center, randomized double-blind, parallel-group study to examine the safety and efficacy of 3mg drospirenone/0.02 mg ethinyl estradiol compared with placebo in the treatment of moderate truncal acne vulgaris. *J Drugs Dermatol* 2013;12:633-637. [PUBMED](#)
10. Leyden JJ, Del Rosso JQ. The effect of benzoyl peroxide 9.8% emollient foam on reduction of *Propionibacterium* acnes on the back using a short contact therapy approach. *J Drugs Dermatol* 2012;11:830-833. [PUBMED](#)
11. Del Rosso JQ, Kircik L, Tanghetti E. Management of truncal acne vulgaris with topical dapsone 7.5% gel. *J Clin Aesthet Dermatol* 2018;11:45-50. [PUBMED](#)
12. Hoffman LK, Del Rosso JQ, Kircik LH. The efficacy and safety of azelaic acid 15% foam in the treatment of truncal acne vulgaris. *J Drugs Dermatol* 2017;16:534-538. [PUBMED](#)
13. Cunliffe WJ. Evolution of a strategy for the treatment of acne. *J Am Acad Dermatol* 1987;16:591-599. [PUBMED](#) | [CROSSREF](#)
14. Ganceviciene R, Zouboulis CC. Isotretinoin: state of the art treatment for acne vulgaris. *J Dtsch Dermatol Ges* 2010;8 Suppl 1:S47-S59. [PUBMED](#) | [CROSSREF](#)
15. Layton A. The use of isotretinoin in acne. *Dermatoendocrinol* 2009;1:162-169. [PUBMED](#) | [CROSSREF](#)
16. Bikowski JB. Subantimicrobial dose doxycycline for acne and rosacea. *Skinmed* 2003;2:234-245. [PUBMED](#) | [CROSSREF](#)
17. Skidmore R, Kovach R, Walker C, Thomas J, Bradshaw M, Leyden J, et al. Effects of subantimicrobial-dose doxycycline in the treatment of moderate acne. *Arch Dermatol* 2003;139:459-464. [PUBMED](#) | [CROSSREF](#)
18. Garner SE, Eady A, Bennett C, Newton JN, Thomas K, Popescu CM. Minocycline for acne vulgaris: efficacy and safety. *Cochrane Database Syst Rev* 2012;2012:CD002086. [PUBMED](#) | [CROSSREF](#)
19. Ochsendorf F. Minocycline in acne vulgaris: benefits and risks. *Am J Clin Dermatol* 2010;11:327-341. [PUBMED](#) | [CROSSREF](#)
20. Charny JW, Choi JK, James WD. Spironolactone for the treatment of acne in women, a retrospective study of 110 patients. *Int J Womens Dermatol* 2017;3:111-115. [PUBMED](#) | [CROSSREF](#)
21. Muhlemann MF, Carter GD, Cream JJ, Wise P. Oral spironolactone: an effective treatment for acne vulgaris in women. *Br J Dermatol* 1986;115:227-232. [PUBMED](#) | [CROSSREF](#)
22. Eastman WJ, Malahias S, Delconte J, DiBenedetti D. Assessing attributes of topical vehicles for the treatment of acne, atopic dermatitis, and plaque psoriasis. *Cutis* 2014;94:46-53. [PUBMED](#)
23. Turegano M, Farris P. *Cosmeceuticals for acne and rosacea*. Basel: Karger Publishers, 2021:82-94.
24. Amer SS, Nasr M, Abdel-Aziz RT, Moftah NH, El Shaer A, Polycarpou E, et al. Cosm-nutraceutical nanovesicles for acne treatment: physico-chemical characterization and exploratory clinical experimentation. *Int J Pharm* 2020;577:119092. [PUBMED](#) | [CROSSREF](#)
25. Kim S, Cho KH. Treatment of facial postinflammatory hyperpigmentation with facial acne in Asian patients using a Q-switched neodymium-doped yttrium aluminum garnet laser. *Dermatol Surg* 2010;36:1374-1380. [PUBMED](#) | [CROSSREF](#)
26. Panchaprateep R, Munavalli G. Low-fluence 585 nm Q-switched Nd:YAG laser: a novel laser treatment for post-acne erythema. *Lasers Surg Med* 2015;47:148-155. [PUBMED](#) | [CROSSREF](#)
27. Zavar VP, Agarwal M, Vasudevan B. Treatment of postinflammatory pigmentation due to acne with Q-switched neodymium-doped yttrium aluminum garnet in 78 Indian cases. *J Cutan Aesthet Surg* 2015;8:222-226. [PUBMED](#) | [CROSSREF](#)
28. Moftah NH, Ibrahim SM, Wahba NH. Intense pulsed light versus photodynamic therapy using liposomal methylene blue gel for the treatment of truncal acne vulgaris: a comparative randomized split body study. *Arch Dermatol Res* 2016;308:263-268. [PUBMED](#) | [CROSSREF](#)
29. Taylor M, Porter R, Gonzalez M. Intense pulsed light may improve inflammatory acne through TNF- α down-regulation. *J Cosmet Laser Ther* 2014;16:96-103. [PUBMED](#) | [CROSSREF](#)
30. Thiboutot DM, Dréno B, Abanmi A, Alexis AF, Araviiskaia E, Cabal MIB, et al. Practical management of acne for clinicians: an international consensus from the global alliance to improve outcomes in acne. *J Am Acad Dermatol* 2018;78:S1-S23.e1. [PUBMED](#) | [CROSSREF](#)
31. Abdel Hay R, Shalaby K, Zaher H, Hafez V, Chi CC, Dimitri S, et al. Interventions for acne scars. *Cochrane Database Syst Rev* 2016;4:CD011946. [PUBMED](#) | [CROSSREF](#)
32. Rivera AE. Acne scarring: a review and current treatment modalities. *J Am Acad Dermatol* 2008;59:659-676. [PUBMED](#) | [CROSSREF](#)
33. St Surin-Lord S, Miller J. Topical treatment of truncal acne with tretinoin lotion 0.05% and azelaic acid foam. *Case Rep Dermatol Med* 2020;2020:5217567. [PUBMED](#) | [CROSSREF](#)
34. Blume-Peytavi U, Fowler J, Kemény L, Draelos Z, Cook-Bolden F, Dirschka T, et al. Long-term safety and efficacy of trifarotene 50 μ g/g cream, a first-in-class RAR- γ selective topical retinoid, in patients with moderate facial and truncal acne. *J Eur Acad Dermatol Venereol* 2020;34:166-173. [PUBMED](#) | [CROSSREF](#)
35. Wagner N, Benkali K, Alió Sáenz A, Poncet M, Graeber M. Clinical pharmacology and safety of trifarotene, a first-in-class rary-selective topical retinoid. *J Clin Pharmacol* 2020;60:660-668. [PUBMED](#) | [CROSSREF](#)
36. Tan J, Beissert S, Cook-Bolden F, Chavda R, Harper J, Hebert A, et al. Impact of facial and truncal acne on quality of life: a multi-country population-based survey. *JAAD Int* 2021;3:102-110. [PUBMED](#) | [CROSSREF](#)
37. Agnew T, Furber G, Leach M, Segal L. A comprehensive critique and review of published measures of acne severity. *J Clin Aesthet Dermatol* 2016;9:40-52. [PUBMED](#)
38. Bernardis E, Shou H, Barbieri JS, McMahon PJ, Perman MJ, Rola LA, et al. Development and initial validation of a multidimensional acne global grading system integrating primary lesions and secondary changes. *JAMA Dermatol* 2020;156:296-302. [PUBMED](#) | [CROSSREF](#)
39. Layton AM, Alexis A, Baldwin H, Bettoli V, Del Rosso J, Dirschka T, et al. The Personalized Acne Treatment Tool - Recommendations to facilitate a patient-centered approach to acne management from the Personalizing Acne: Consensus of Experts. *JAAD Int* 2023;12:60-69. [PUBMED](#) | [CROSSREF](#)
40. Thomas CL, Kim B, Lam J, Richards S, See A, Kalouche S, et al. Objective severity does not capture the impact of rosacea, acne scarring and photoaging in patients seeking laser therapy. *J Eur Acad Dermatol Venereol* 2017;31:361-366. [PUBMED](#) | [CROSSREF](#)
41. Hayashi N, Higaki Y, Kawamoto K, Kamo T, Shimizu S, Kawashima M. A cross-sectional analysis of quality of life in Japanese acne patients using the Japanese version of Skindex-16. *J Dermatol* 2004;31:971-976. [PUBMED](#) | [CROSSREF](#)