

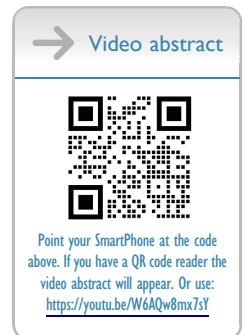
Fine-Tuning Treatments with PN HPT Devices to Improve Asian Skin Quality: The ACES Consensus

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Introduction and Purpose: Biological differences between Asians and Caucasians contribute to variations in the prevalence of skin disorders such as melanocytoses and skin aging. The current regenerative medicine indications were primarily developed for Caucasians; adapting them to the specific needs of Asian individuals may be beneficial. Five distinguished Asian experts had this purpose in mind when they convened to develop evidence-based and experience-based recommendations on maximizing the benefits of natural-origin ingredient Polynucleotides High Purification Technology (PN HPT™) in individuals of Asian descent. They based their recommendations on available literature and the outcomes of a digital survey. PN HPT supports dermal fibroblasts in producing collagen, elastin, and matrix by replenishing the dermal pool of nucleotide precursors.

Patients and Methods: One hundred and one East Asian specialists in aesthetic and regenerative medicine accepted an invitation from Mastelli S.r.l. Sanremo, Italy, and Ardence Aesthetic, Petaling Jaya, Selangor, Malaysia (corporate sponsors), to respond to a 50-item online survey questionnaire. A subsequent consensus-building board meeting elaborated on the survey outcomes with a simplified Delphi approach, providing recommendations for the safe and effective use of PN HPT in Asian individuals.

Results: The paper highlights in specific chapters the perceptions of the surveyed East Asian specialists regarding the PN HPT indications and procedures (choice of PN HPT formulations, injection technique, scheduling, and layer) in facial areas and the neck. Furthermore, the paper discusses the experts' views on combining PN HPT with other skin regenerative strategies, as well as the innovative concept of "PN HPT Priming".

Conclusion: Offering tailored PN HPT treatment algorithms that take into consideration the Asian biological and cultural specificities, although without stratification for age and skin quality determinants, the board's suggestions are of immediate clinical applicability and may support clinicians who use PN HPT devices in their daily regenerative medicine practice.

Keywords: consensus, dermal priming, perceptual skin quality categories, PN HPT, polynucleotides high purification technology

Introduction

The differences in skin biology between Asian and Caucasian individuals, as illustrated in two landmark studies published in 2006 and 2019, are mainly related to melanocyte biology and the progression of photoaging. The weaker mechanical barrier function in Asian skin is linked to reduced subcutaneous levels of natural moisturizing factor and a reduced number of cornified cell layers.^{1,2} Early signs of skin aging, such as wrinkles, skin sagging, and loss of thickness, are less pronounced and more slowly developing in Asians compared to Caucasians, possibly because of the greater dermal thickness and collagen content in Asian skin. Conversely, post-inflammatory hyperpigmentation, lentigines, freckles, and benign dermal melanocytoses are peculiarly frequent in Asians.¹⁻³ Sensitivity to exogenous chemicals also appears to be more prevalent in people of Asian descent than in Caucasians.² However, generalizations can be misleading. Skin color changes occur more precociously in Asians than in Caucasians, yet only in subjects with

melanin-rich skin. Moreover, among Asians, individuals of Chinese and Japanese descent tend to have lower Fitzpatrick skin types than those from the Indian subcontinent, where types IV and V are prevalent. South-East Asian populations generally fall in between, particularly in countries hosting a substantial Chinese diaspora. Additionally, regional Asian beauty archetypes vary.²

All previous considerations suggest that the treatment criteria followed by aesthetic and regenerative medicine specialists in Europe or North America may not be as robust in Asia. Disappointing or suboptimal outcomes may occur when applying “European” regenerative medicine treatment protocols acritically in a non-Caucasian environment. The proposed four perceptual skin quality categories — Skin Tone Evenness, Skin Surface Evenness, Skin Firmness, and Skin Glow — and their subcategories remain the same for individuals of Asian and non-Asian descent.⁴ Still, we cannot trust a priori that treatment protocols developed primarily for non-Asian subjects can achieve positive outcomes in these perceptual categories for Asian subjects. Well-designed clinical studies that consider the distinct biophysical and somatosensory profiles of ethnic skin types are currently scarce in Asian cohorts, leading to a paucity of structured consensus or guidelines specific to Asian skin. However, only such studies can provide a solid foundation for locally nuanced regenerative medicine treatment protocols targeted at Asian populations.

Knowledge from Asian regenerative medicine clinical studies is expanding.^{5–7} In the meantime, the experience of regional Asian experts in aesthetic medicine and plastic surgery may provide trustworthy guidance to local specialists about treatment strategies in their everyday clinical practice based on available evidence.

The PN HPT (Polynucleotides High Purification Technology) Paradigm for Dermal Rejuvenation

The gonads of salmon or rainbow trout (*Oncorhynchus mykiss*), raised for human consumption under stringent food safety and pollution-control standards, are the source of Polynucleotides High Purification Technology (PN HPT).^{8,9} This functional ingredient is part of a new line of Class-III CE-marked medical devices for intradermal injection distributed worldwide in more than thirty countries. The PN HPT-based devices are the industrial result of a vertically integrated supply and production chain, from the fish farm to prefilled single-use syringes designed for targeted skin bio-revitalization and rejuvenation of the facial and periocular areas, décolleté, neck, hands, scalp, and stretch marks.^{8–10} Single-ingredient formulations are available in Italy, Europe, and many extra-European markets. These formulations, developed by Mastelli, Sanremo, Italy (Table 1), are for use with various techniques (Table 2). A cannula allows easy access to the superficial subcutaneous tissues. An example of the PN HPT injection techniques — standard and requiring no specific training — is illustrated in Video S1, showing the PN HPT micro-cannula injection technique in a middle-facial area. The video clip emphasizes that, unlike filler injections, micro-cannula injection techniques require remaining as superficial as possible.

Biocompatible PN HPT, free from protein contaminants and devoid of pharmacological or allergic potential, is the end product of high-tech purification and sterilization proprietary procedures that adhere to world-class quality assurance and Good Manufacturing Practice standards. PN HPT physiologically supports dermal fibroblasts in the self-limited production of collagen, elastin, and extracellular matrix without a tendency toward fibrosis.^{8–10} A PN HPT session

Table 1 PN HPT™-Based Medical Devices of the Plinest Line That are Available in Europe and Many Extra-European Markets

	Skin Type or Area	PN HPT™ Concentration
Plinest	Normal skin and aged skin	PN HPT™ 40 mg/2mL
Plinest fast	Sensitive and delicate areas	PN HPT™ 15 mg/2mL
Plinest eye	Eye contour	PN HPT™ 15 mg/2mL
Plinest hair	Scalp	PN HPT™ 15 mg/2mL

Table 2 Medical Devices of the Plinest Line: Suggested Administration Technique and Injection Layers

Administration technique	Needle	Preferred technique (included in the packaging): 30G; 32G or 33G may also be considered, but only with Plinest fast
	Microcannula	Suggested gauge: 25–27G 38–40mm
Injection layer and technique	Intradermal	Needle
	Subcutaneous or intradermal	Microcannula

typically lasts no more than 20–30 minutes, is suitable for all degrees of skin aging, and allows for an immediate return to daily activities.⁸

The outcomes of many years of expanding preclinical and clinical knowledge about PN HPT, almost exclusively in the West, are summarized in two recent open-access consensus documents, authored by Western authors, published in 2023 and 2025.^{8,9} After injection, PN HPT exhibits short-term tissue hydrating and volume-enhancing effects similar to those of hyaluronic acid.¹¹ In vivo, the highly hydrophilic PN HPT and the water dipoles of their hydration cuffs reorganize into an elastic three-dimensional gel with hyaluronate-like tissue volumizing effects.^{8–10} Additionally, PN HPT acts as scavengers of oxygen-derived free radicals.¹²

In the short term, the hydrated dermal environment facilitates the production of collagen, hyaluronic acid, tropoelastin, and other extracellular matrix components by fibroblasts. Furthermore, the reduced oxidative stress levels in the dermal environment counteract the degradation of hyaluronic acid and the physiological depletion of tissue antioxidants that occurs with aging.^{8–10,13} Minor untoward effects, if any, are transient.^{8,9}

Equally interesting are the long-term functional effects of PN HPT in the dermal environment. Damaged and hypoxic cells release polynucleotide derivatives into the extracellular spaces.^{14,15} Likewise, intradermal PN HPT acts (non-pharmacologically) as a primer for fibroblasts by passively replenishing their pool of nitrogen bases, nucleosides, and nucleotide precursors.^{10,14} Lastly, the PN HPT dermal priming paradigm, supported by an ongoing program of clinical studies, states that a prior or concurrent PN HPT dermal tilling enhances the efficiency and resilience of dermal fibroblasts, leading to more robust and faster responses to other skin revitalization strategies such as fillers, energy-based therapies, carboxytherapy, chemical peels, or needling.^{9,16} Safety studies have predictably confirmed that the toxicological risks of natural-origin PN HPT are negligible at all administered doses, regardless of the injection site.¹⁷

Given the described biological peculiarities in the skin of Asian individuals, five distinguished Asian experts gathered to develop systematic, evidence-based, and experience-based recommendations about PN HPT. They attained this goal through a consensus-building exercise aimed at maximizing the benefits of this ingredient in the daily regenerative medicine practices of their Asian colleagues.

Patients and Methods

A Board Expert Consensus on PN HPT Dermal Bio-Revitalization in East Asian Subjects

Five distinguished experts in dermatology, plastic surgery, and aesthetic medicine from South-East Asia with extensive experience in enhancing skin quality and maintaining acquired benefits over time (The Asian Aesthetic Consensus on the Efficacy and Safety of PN HPT or ACES board) convened in Kuala Lumpur, Malaysia, on December 1st, 2024. Under the leadership of the Corresponding Author, Dr. Ting Song Lim, the board's primary purpose was to develop evidence-based and experience-based recommendations for the safe and effective use of PN HPT for skin rejuvenation in the vast, densely populated region stretching from Singapore and Malaysia northward to Thailand, Indonesia, and the Philippines, integrating the best available evidence, particularly concerning Asian individuals, along with their clinical judgment and expertise.

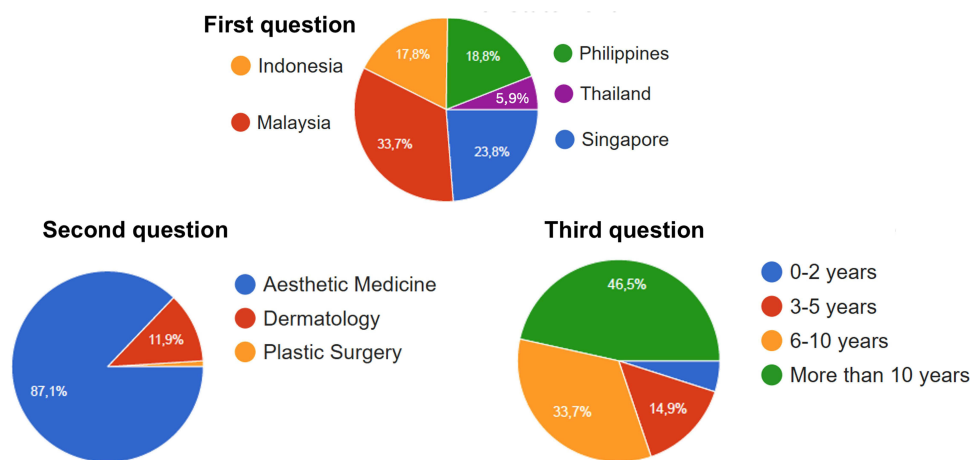


Figure 1 Professional profiles and countries of origin of the 101 survey responders (first three survey questions). Graphs reproduced with the copyright holder's permission. Question no. 1: Which is the country where you practice? - Question no. 2: What is your medical specialty? - Question no. 3: How many years of regenerative medicine practice do you have?.

Purpose of the Board's Meeting and Preliminary Activities

In addition to evidence from existing literature, the outcomes of a preliminary survey —utilizing a digital 68-item questionnaire to understand current personal attitudes towards PN HPT skin revitalization in South-East Asia —formed the basis for the face-to-face board discussions held in December. Since the survey only gathered information on treatment practices anonymously and did not involve procedures with human or animal subjects, approval from an Institutional Review Board was not required.

A panel of 101 East Asian specialists in aesthetic and regenerative medicine with varying levels of experience completed the online survey questionnaire between September and early November 2024. The names of the specialists surveyed are available upon documented request, pending their agreement. [Figure 1](#) illustrates the profile and geographical distribution of the survey respondents. Nearly half of the surveyed specialists had over ten years of experience, while younger specialists with less than two years of experience accounted for 4.9%.

The online discussion among surveyed specialists and the finalization of ACES questions, focusing on the revitalization of the entire forehead and periorbital areas, mid and lower face, and neck, began in late July. To prevent missing answers, the digital system ensured the survey form could not close until the surveyed specialist answered all questions. The online survey questionnaire was ready on Google Forms by mid-to-late August. The survey questions focused on various aspects, including PN HPT doses and total injected volumes, the number of injection sessions, the intervals between sessions, and the techniques for administering PN HPT. The collection and processing of online responses, along with quantitative analysis and report preparation, continued until late November 2024. [Supplementary Figure 1](#) summarizes the 33 questions of the ACES survey.

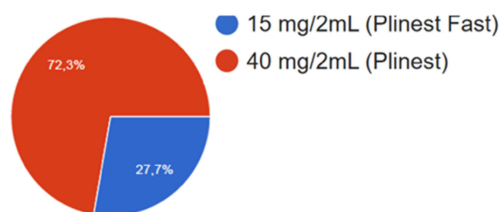
A set of simplified Delphi rules served as the basis for the voting process and the categorization of survey outcomes as “Recommendation” (more than 80% agreement among the surveyed panel), “Consensus statement” (60% to 80% agreement), and “No consensus” (less than 60% agreement). The formal Delphi rules were respected, but the odd, limited number of board experts allowed for simplifying the voting procedures and managing disagreements. The final categorizations by board members do not need to be in strict agreement with survey outcomes.

Results

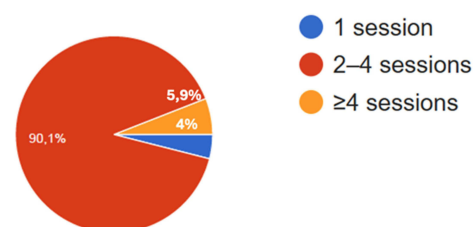
Forehead (Entire Skin Surface)

[Figure 2](#) summarizes the clinical perspectives of surveyed East Asian specialists regarding PN HPT regenerative strategies in this area. The survey responses did not consider the degree of skin aging. Retrospectively, this could emerge as a potential bias and a likely contributor to the high variability of responses. The prevalent use of low-concentration, low-dose Plinest

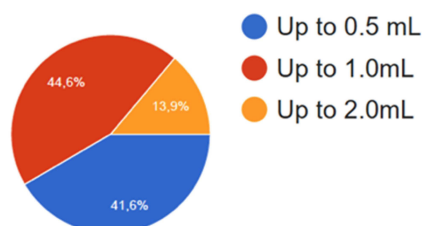
Fourth Question



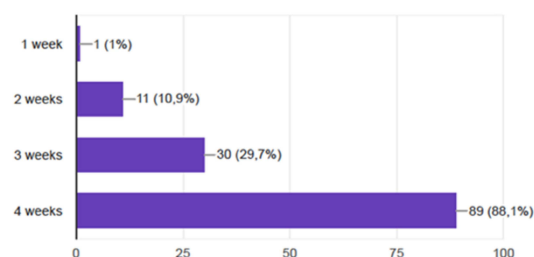
Sixth Question



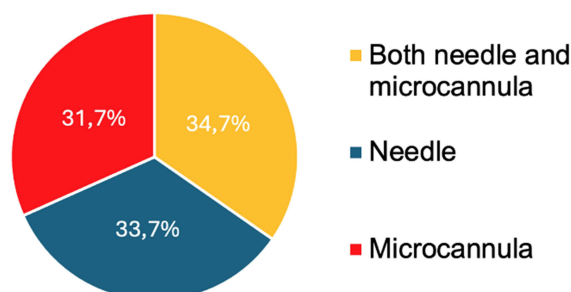
Fifth Question



Seventh Question



Eighth Question



Ninth Question

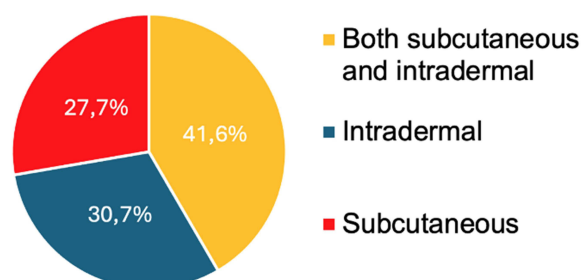


Figure 2 Treatment strategies for the forehead area among surveyed Asian specialists. Distribution of responses for survey questions four through nine; 101 responders. Graphs reproduced with permission from the copyright holder. Question no. 4: In treating the FULL FOREHEAD AREA, which dose of PN PT do you use? - Question no. 5: In treating the FULL FOREHEAD AREA, what total injection volume of PN HPT do you use? - Question no. 6: In treating the FULL FOREHEAD AREA, how many PN HPT sessions do you perform? - Question no. 7: In treating the FULL FOREHEAD AREA, what interval between PN HPT sessions do you use? - Question no. 8: In treating the FULL FOREHEAD AREA, which is the PN HPT administration technique that you use? - Question no.9: In treating the FULL FOREHEAD AREA, which layer do you inject with PN HPT?

Fast, compared to higher-concentration Plinest, is surprising and may be due to the intention of recovering the remaining residue in the same syringe previously used in sensitive and delicate areas such as the eye contour.

Only two statements qualified as Recommendations: “Two-to-four session PN HPT treatment cycle” and “Four-week interval between PN HPT sessions”. During their discussion of survey outcomes at the Kuala Lumpur meeting, the board also considered what the survey questions had overlooked: the differences in skin aging progression, local skin sensitivity, and skin thickness. Taking these factors into account, the experts recommended Plinest as the preferred product even though it had not reached the 80% threshold.

Table 3 Summary of the Board's Suggestions for Treatment Strategies in the Forehead Area, Based on the Board's Review and Discussion of Survey Outcomes

Forehead Area	Product	Total Injection Volume	Administration	Injection Layer	Number of Sessions and Time Lag Between Sessions
Normal skin	Plinest	0.5–1 mL	Needle or microcannula	Intradermal or subcutaneous	2 to 4 sessions at 4-week intervals
Aged skin	Plinest	0.5–1 mL	Needle or microcannula	Intradermal or subcutaneous	2 to 4 sessions at 4-week intervals
Sensitive and delicate skin	Plinest fast	0.5–1 mL	Needle or microcannula	Intradermal or subcutaneous	2 to 4 sessions at 4-week intervals

Table 3 summarizes the final board suggestions for rejuvenation of the forehead area. Several experts recommended the use of microcannulas. Skin sensitivity and the degree of skin aging should guide the operator in selecting the proper PN HPT administration technique and frequency of treatment sessions.

Periorbital Area

Figure 3 summarizes the considerations of surveyed East Asian specialists regarding PN HPT regenerative strategies in the delicate periorbital area. The high use of high-dose Plinest in this delicate area is surprising, as Plinest Fast or Plinest Eye would be more indicated. Interpreting such a finding is difficult: it may indicate a lack of information about the delicate skin structure in the area or a desire to achieve a rapid aesthetic outcome in the clearly evident periorbital area. However, the theme warrants further investigation and correction to the extent possible. Plinest Fast reached the threshold for a consensus statement. Once again, the lack of preliminary stratification for skin aging severity could explain the high variability of responses. The surveyed specialists who answered high-dose Plinest to question 10 are the same ones who indicated a quantity of less than 0.5 mL for each eye in question 11.

The experts dismissed the Plinest hypothesis emerging from the survey and recommended Plinest Fast or Plinest Eye. Treating both the lower and upper eyelids with a recommended maximum dose of 0.2 mL of Plinest Fast may be highly beneficial in improving contour and restoring a more youthful appearance. This treatment strategy may be especially valuable for addressing the A-frame deformity, a hollow or sunken appearance of the upper eyelid, which results from age-related fat loss or structural changes in the periocular area. In the opinion of the board's experts, the operator should determine the PN HPT administration technique and frequency based on the individual's degree of skin aging and sensitivity.

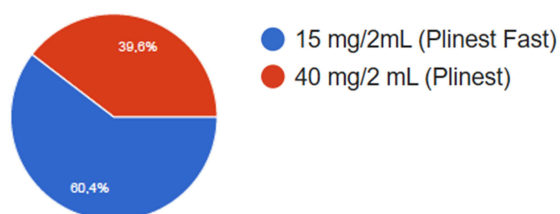
Table 4 summarizes the final suggestions of the board's experts for rejuvenation of the periorbital area. Combining the responses "Both needle and microcannula" and "Microcannula" (question 8), cannula administration appears to be the preferred method. Similarly, by combining the responses "Both subcutaneous and intradermal" and "Subcutaneous" (question 9), the subcutaneous injection level appears as the recommended option. However, the board experts preferred to leave open the choice of PN HPT administration technique and frequency of administration based on the severity of skin aging and sensitivity. The high percentage of surveyed specialists who preferred intradermal administration (27.5%) may be related to skin aging or sensitivity.

Midface, Preauricular, and Malar Area

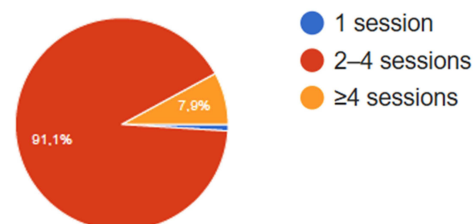
Figure 4 summarizes the clinical perspectives of surveyed East Asian specialists regarding PN HPT regenerative strategies in the midface, preauricular, and malar areas. Failing to account for varying levels of skin aging and sensitivity likely explains the variability in responses eighteen to nineteen.

Table 5 summarizes the board's suggestions for rejuvenating the midface, preauricular, and malar areas following their review and discussion of the survey outcomes. The board indicates that high-dose Plinest is usually the preferred

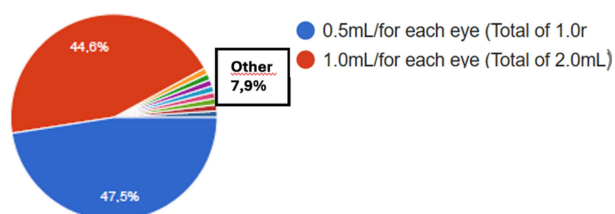
Tenth Question



Twelfth Question

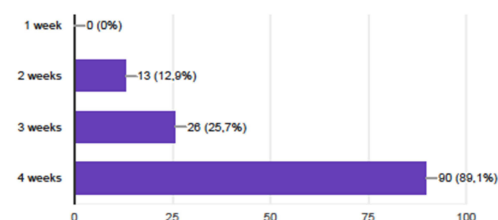


Eleventh Question

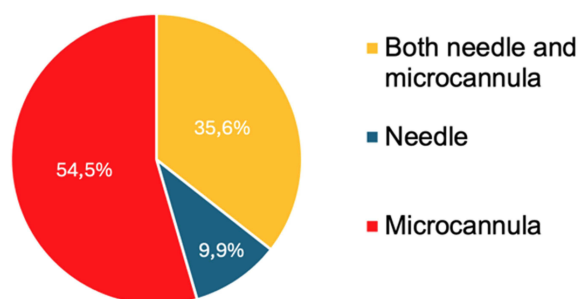


Thirteenth Question

(More than one answer allowed)



Fourteenth Question



Fifteenth Question

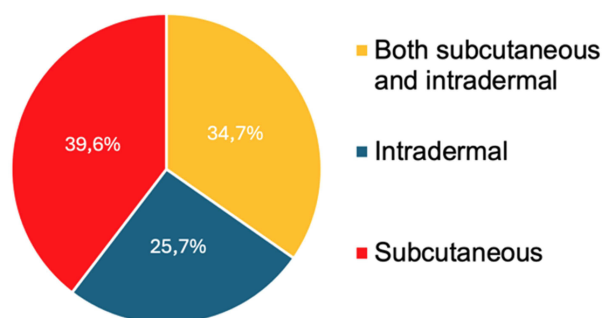


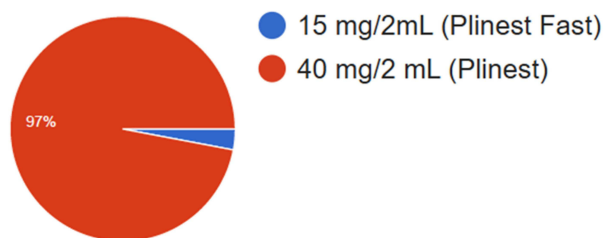
Figure 3 Treatment strategies for the periorbital area among surveyed Asian specialists. Distribution of responses for survey questions ten through fifteen; 101 responders. Graphs reproduced with permission from the copyright holder: Question no. 10: In treating the PERIORBITAL AREA, which dose of PN PT do you use? - Question no. 11: In treating the PERIORBITAL AREA, what total injection volume of PN HPT do you use? - Question no. 12: In treating the PERIORBITAL AREA, how many PN HPT sessions do you perform? - Question no. 13: In treating the PERIORBITAL AREA, what interval between PN HPT sessions do you use? - Question no. 14: In treating the PERIORBITAL AREA, which is the PN HPT administration technique that you use? - Question no. 15: In treating the PERIORBITAL AREA, which layer do you inject with PN HPT?.

product (1 to up to 2 mL per side or no more than 4 mL bilaterally). Plinest Fast may be the alternative in delicate and sensitive areas. According to the board experts, the choice of PN HPT administration technique and the frequency of treatment sessions should be tailored to the severity of skin aging and sensitivity.

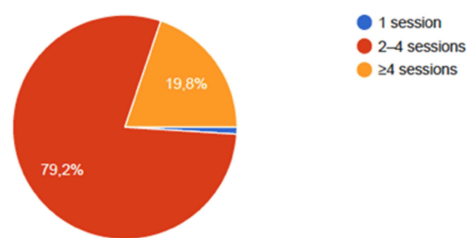
Table 4 Summary of the Board's Suggestions for Treatment Strategies in the Periorbital Area, Based on the Board's Review and Discussion of Survey Outcomes

Periorbital Area	Product	Total Injection Volume	Administration	Injection Layer	Number of Sessions and Time Lag Between Sessions
Upper and lower eyelids	Plinest fast / eye	1 mL for each side	Needle or microcannula	Intradermal or subcutaneous	2 to 4 sessions at 4-week intervals

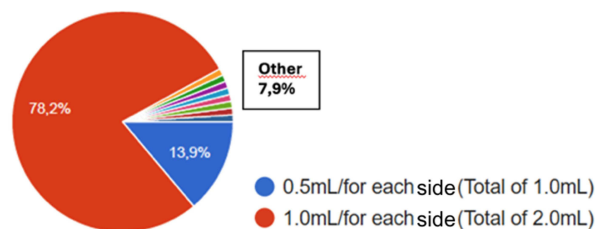
Sixteenth Question



Eighteenth Question

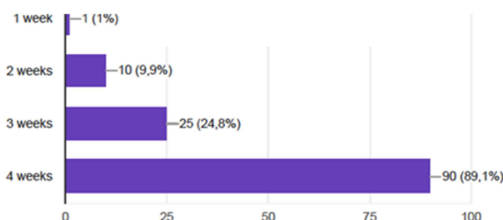


Seventeenth Question

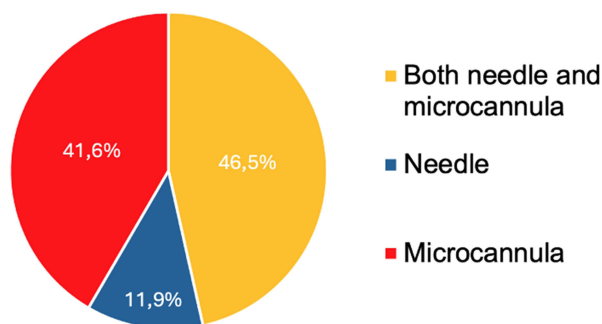


Nineteenth Question

(More than one answer allowed)



Twentieth Question



Twenty-first Question

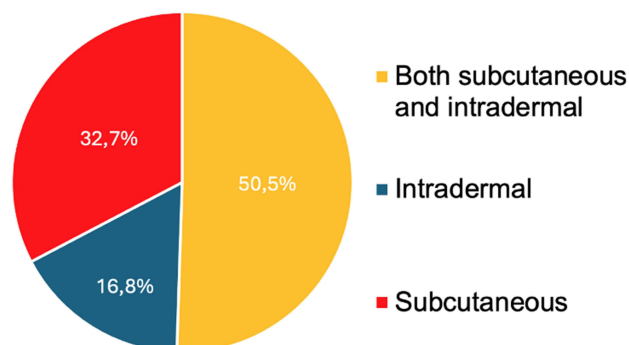


Figure 4 Treatment strategies for the midface, preauricular, and malar areas among surveyed Asian specialists. Distribution of responses for survey questions sixteen through twenty-one; 101 responders. Graphs reproduced with permission from the copyright holder. Question no. 16: In treating the MIDFACE, PREAURICULAR, AND MALAR AREAS, which dose of PN PT do you use? - Question no. 17: In treating the MIDFACE, PREAURICULAR, AND MALAR AREAS, what total injection volume of PN HPT do you use? - Question no. 18: In treating the MIDFACE, PREAURICULAR, AND MALAR AREAS, how many PN HPT sessions do you perform? - Question no. 19: In treating the MIDFACE, PREAURICULAR, AND MALAR AREAS, what interval between PN HPT sessions do you use? - Question no. 20: In treating the MIDFACE, PREAURICULAR, AND MALAR AREAS, which is the PN HPT administration technique that you use? - Question no. 21: In treating the MIDFACE, PREAURICULAR, AND MALAR AREAS, which layer do you inject with PN HPT?

Lower Facial Areas (Jawline and Chin)

Figure 5 summarizes the considerations of surveyed East Asian specialists regarding PN HPT regenerative strategies in the lower facial area, namely the jawline and chin. Failing to account for skin aging and sensitivity likely explains the variability in responses twenty-four to twenty-seven.

Table 6 summarizes the board's suggestions for rejuvenating the lower face area based on the review and discussion of survey outcomes. Overall, the board identifies high-dose Plinest as the preferred product; Plinest Fast may be suitable

Table 5 Summary of the Board's Suggestions for Treatment Strategies in the Midface, Preauricular, and Malar Areas, Based on the Board's Review and Discussion of Survey Outcomes

MID-Face Area	Product	Total Injection Volume	Administration	Injection Layer	Number of Sessions and Time Lag Between Sessions
Normal skin	Plinest	1 mL for each side	Needle or microcannula	Intradermal or subcutaneous	2 to 4 sessions at 4-week intervals
Aged skin	Plinest	1 mL for each side	Needle or microcannula	Intradermal or subcutaneous	2 to 4 sessions at 4-week intervals
Sensitive and delicate skin	Plinest fast	1 mL for each side	Needle or microcannula	Intradermal or subcutaneous	2 to 4 sessions at 4-week intervals

for delicate and sensitive areas. The severity of skin aging and sensitivity should inform the choice of the appropriate PN HPT administration technique and the frequency of treatment sessions.

Neck Area

Nearly a third of surveyed East Asian specialists (33 or 32.7%, question 31) reported having no experience in neck rejuvenation, possibly reflecting local cultural and religious attitudes toward skin exposure. Patients are generally unaware of this treatment option. Figure 6 summarizes the considerations regarding PN HPT regenerative strategies in the upper and lower neck areas, limiting the outcomes presented to those shared by the specialists, two-thirds of whom reported experience with PN HPT products in this field. Given the unexpected cultural outcome revealed by the survey, addressing this issue should now be a task for the board.

Table 7 outlines the board's suggestions for rejuvenating the neck area, based on survey outcomes from two-thirds of specialists who reported experience with PN HPT products in this area. Overall, the board recommends Plinest as the product for neck rejuvenation ("Recommendation" level of agreement), utilizing the entire contents of the 2-mL prefilled syringe. Regarding the PN HPT administration technique and the frequency of treatment sessions, no suggestion qualified as a "Recommendation" or a "Consensus statement", and the board chose not to provide definitive indications, leaving the matter to the individual decisions of practitioners based on the severity of skin aging and skin sensitivity.

Indications for PN HPT

The surveyed specialists unanimously gave the same affirmative response to the question, "Does PN HPT improve the skin's extracellular matrix and soft tissues?" (Survey item 34). All questions 35 through 42, which focused on evaluating the other effects and indications proposed for PN HPT (Box 1), met the "Recommendation" threshold with degrees of agreement ranging from 84.2% to 97.0%.

Concomitant PN HPT Regenerating Treatment Over Multiple Areas

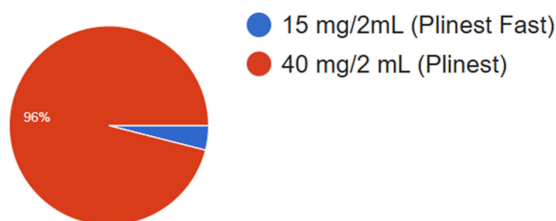
For full-face treatment, the board recommends using a maximum of three prefilled Plinest syringes: one to two Plinest syringes for the face and forehead; one Plinest Fast syringe for the periocular region. For concomitant full-face and neck treatment, the board recommends the same as for full-face treatment (Plinest plus Plinest Fast) with an additional Plinest syringe for the neck area.

In cases of complex regenerating strategies that involve the midface, neck, and décolleté, the combination product Newest (PN HPT 10mg/mL + HA 10mg/mL) can also be an option in countries where it is available.

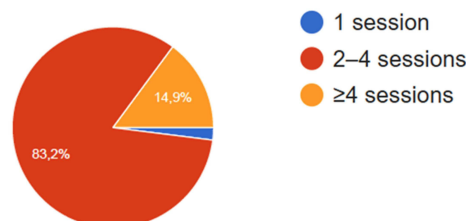
Combination Treatment Strategies and the "PN HPT Priming" Concept

According to the overall survey outcomes, Asian specialists are more likely to use PN HPT as a monotherapy because there is limited awareness about the benefits of combining PN HPT sequentially with other regenerative treatments.

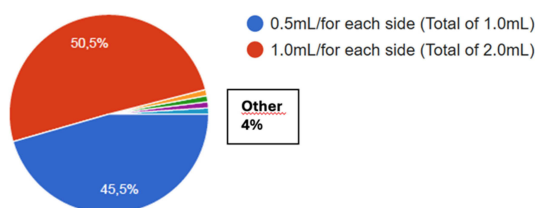
Twenty-second Question



Twenty-fourth Question

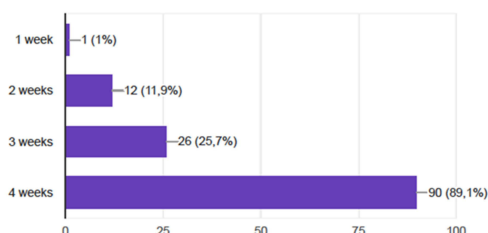


Twenty-third Question

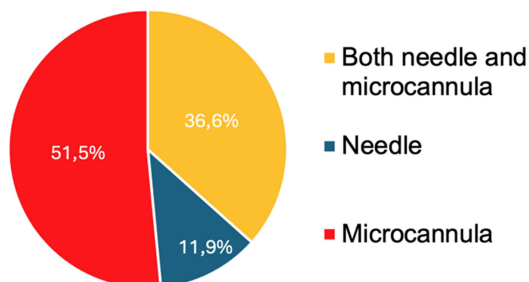


Twenty-fifth Question

(More than one answer allowed)



Twenty-sixth Question



Twenty-seventh Question

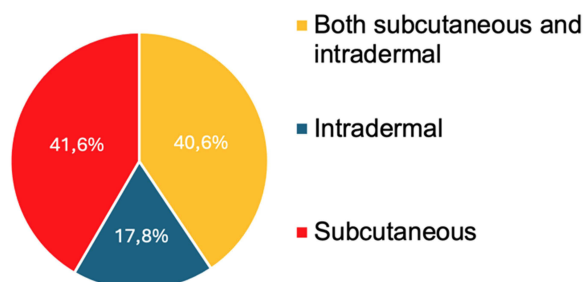


Figure 5 Treatment strategies for the lower facial areas (jawline and chin) among surveyed Asian specialists. Distribution of responses for survey questions twenty-two through twenty-seven; 101 responders. Graphs reproduced with permission from the copyright holder. Question no. 22: In treating the LOWER FACIAL AREAS (JAWLINE AND CHIN), which dose of PN PT do you use? - Question no. 23: In treating the LOWER FACIAL AREAS (JAWLINE AND CHIN), what total injection volume of PN HPT do you use? - Question no. 24: In treating the LOWER FACIAL AREAS (JAWLINE AND CHIN), how many PN HPT sessions do you perform? - Question no. 25: In treating the LOWER FACIAL AREAS (JAWLINE AND CHIN), what interval between PN HPT sessions do you use? - Question no. 26: In treating the LOWER FACIAL AREAS (JAWLINE AND CHIN), which is the PN HPT administration technique that you use? - Question no. 27: In treating the LOWER FACIAL AREAS (JAWLINE AND CHIN), which layer do you inject with PN HPT?

A paradigmatic example is the CO₂ lasers. According to the survey outcomes, due to its burden of side effects, including hyperpigmentation, discoloration, and skin spots, the ablative CO₂ laser, typically used for treating acne scars rather than as an anti-aging strategy, is not much used in combination with PN HPT (42.6%). Higher percentages of surveyed specialists consider associating PN HPT with the PICO (picosecond) lasers (7.2%), microneedling (73.3%), transdermal radiofrequency devices (52.5%), high-intensity focused ultrasound (HIFU) or micro-focused ultrasound (MFU) devices (69.3%), and botulinum toxin (66.3%).

Backed by evidence-based research, the “PN HPT Priming” concept centers around the unique potential of PN HPT to act as a tissue primer, enhancing and accelerating the skin’s response to subsequent revitalization treatments.⁸ Hopefully, the ACES consensus will help deepen understanding and provide a more widespread acknowledgment of

Table 6 Summary of the Board's Suggestions for Treatment Strategies in the Lower Face Areas (Jawline and Chin), Based on the Board's Review and Discussion of Survey Outcomes

Lower Face Area	Product	Total Injection Volume	Administration	Injection Layer	Number of Sessions and Time Lag Between sessions
Normal skin	Plinest	0.5 to 1 mL for each side	Needle or microcannula	Intradermal or subcutaneous	2 to 4 sessions at 4-week intervals
Aged skin	Plinest	0.5 to 1 mL for each side	Needle or microcannula	Intradermal or subcutaneous	2 to 4 sessions at 4-week intervals
Sensitive and delicate skin	Plinest fast	0.5 to 1 mL for each side	Needle or microcannula	Intradermal or subcutaneous	2 to 4 sessions at 4-week intervals

the benefits of PN HPT when used in conjunction with treatments such as lasers, light and energy devices, fillers, peels, microneedling, and even surgery.

Side Effect Profile

The board confirmed that, similar to other micro-invasive procedures, some local injection site reactions may be expected, including erythema, bruises, and, less frequently, bumps, hematoma, and local burning. Erythema typically resolves within 72 hours, with resolution within an hour in 30% of individuals and no more than 12 hours in 40%. Bumps, which also occur more frequently with the needle and microdroplet technique, typically disappear within 72 hours (survey question 49). The timeframe is similar for hematomas and bruises, partially preventable with ice wraps during treatment, with a higher incidence associated with needles and a lower incidence when using cannulas.

The treated subject should avoid sunlight and exposure to UV lamps for 48 hours. They should not apply makeup for at least six hours after the procedure, ideally for twelve hours, especially after using needles. Treated subjects may also consider applying a soothing cream and, at their discretion, request an anesthetic cream.

Discussion

The outcomes of the ACES advisory board may help develop tailored PN HPT treatment algorithms based on the biological and cultural specificities of Asian individuals, thereby assisting clinicians in their daily practice with PN HPT devices and fulfilling the goals of the distinguished thought leaders who conceived and organized the ACES activities leading up to the Kuala Lumpur board meeting. Most treatment suggestions reached a "Recommendation" level of agreement, with no immediately appreciable national differences and consistently similar outcomes among surveyed specialists of different age groups. Consequently, the multinational sample of Asian specialists seems to have little doubt about the value of PN HPT in achieving maximum satisfaction for the subjects seeking improvement in skin quality. The surveyed Asian specialists seemed to appreciate the unique position of PN HPT within skin rejuvenation strategies.^{8–10} Specifically, they seemed to understand that PN HPT appear to belong to a different class than volume-enhancing fillers, although the highly hydrophilic PN HPT also immediately enhance volume. They seemed to understand and appreciate the concept that, over the longer term, natural-origin PN HPT support fibroblast activity and improve the dermal environment by replenishing the dermal pools of critical polynucleotide precursors.^{8–10} Of course, all favorable conclusions should be balanced against an intrinsic limit—they arise from the self-reported survey data and subjective expert assessment of available literature on the preclinical and clinical profile of PN HPT. Moreover, some other biases and methodological limitations might have influenced the outcomes of the consensus project.

Limitations and Biases

The large number of specialists sampled is a strong point of the survey; however, in retrospect, the lack of any preliminary stratification appears to be a severe bias that requires acknowledgement because it limits the targeted and

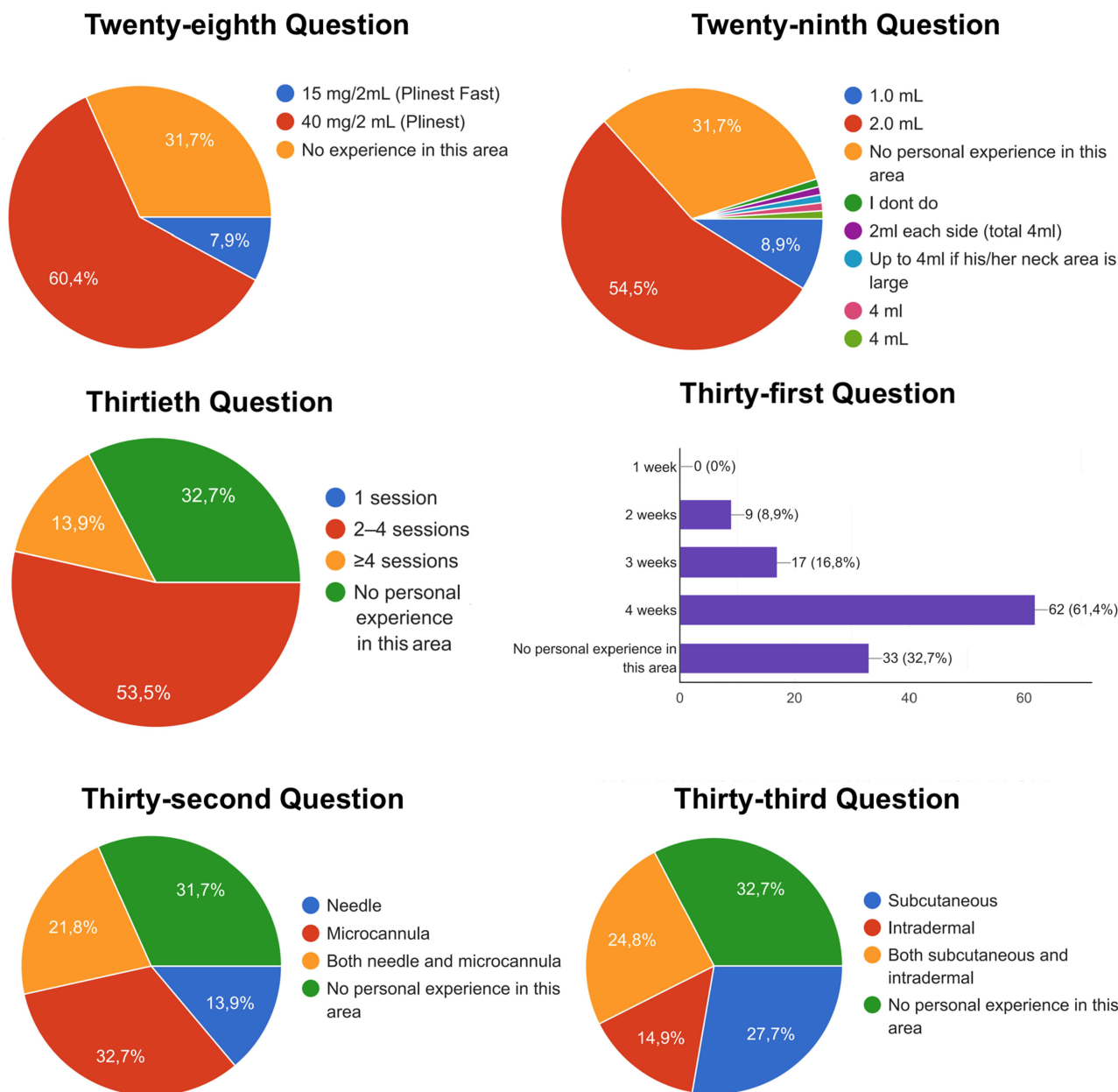


Figure 6 Treatment strategies for the neck area among surveyed Asian specialists. Distribution of responses for survey questions twenty-eight through thirty-three; 101 responders. Graphs reproduced with permission from the copyright holder. Question no. 28: In treating the NECK AREA, which dose of PN PT do you use? - Question no. 29: In treating the NECK AREA, what total injection volume of PN HPT do you use? - Question no. 30: In treating the NECK AREA, how many PN HPT sessions do you perform? - Question no. 31: In treating the NECK AREA, what interval between PN HPT sessions do you use? - Question no. 32: In treating the NECK AREA, which is the PN HPT administration technique that you use? - Question no. 33: In treating the NECK AREA, which layer do you inject with PN HPT?

trustworthy application of recommendations to individuals of different ages and degrees of skin aging and sensitivity, and exposes conclusions to the risk of overgeneralizations. Future surveys should address this limitation in survey design. A certain lack of statistical details, such as tabulating and reporting confidence intervals, using a set of questions that lack a clinical validation before digital administration, and the risk of recall and reporting bias due to self-reported practice patterns are other methodological biases.

Another bias is the insufficient attention to intra-Asian ethnic differences. The soft peachy undertones and sensitivity to redness of Japanese skin likely indicate a biological difference with the brighter, reddish, and less yellowish Chinese skin, not to mention intra-national ethnic differences in India or Indonesia.¹⁸ Unfortunately, the authors believe that, currently, there are at most only some unsystematic hints about variable biological responses in different Asian populations to skin

Table 7 Summary of the Board's Suggestions for Treatment Strategies in the Neck Area, Based on the Board's Review and Discussion of Survey Outcomes

Neck Area	Product	Total Injection Volume	Administration	Injection Layer	Number of Sessions and Time Lag Between Sessions
Normal skin	Plinest	2 mL	Needle or microcannula	Intradermal or subcutaneous	2 to 4 sessions at 4-week intervals
Aged skin	Plinest	2 mL	Needle or microcannula	Intradermal or subcutaneous	2 to 4 sessions at 4-week intervals
Sensitive and delicate skin	Plinest fast	2 mL	Needle or microcannula	Intradermal or subcutaneous	2 to 4 sessions at 4-week intervals

Box 1 Other Surveyed Effects and Indications Proposed for PN HPT™

Appearance of wrinkles
Appearance of pores
Hyperpigmentation (eg, post-inflammatory hyperpigmentation, melasma)
Erythema of the skin
Skin glow and radiance
Appearance of acne scars
Hydration of the skin
Firmness and elasticity of the skin

treatments, including aesthetic procedures. The lack of extensive personal experience with transnational treatments among some board members was also a factor. The issue should undoubtedly be a focus for future research.

Conclusions

Pending further validation through clinical studies, the surveyed Asian specialists largely agree that treatment with the PN HPT ingredient formulated into intradermal devices may lead to meaningful improvements in skin surface, firmness, pigmentation, and radiance, with a notable absence of late-onset adverse events.

Data Sharing Statement

The minutes of board discussions are archived and available upon reasonable request from the Corresponding Author.

Ethical Statement

All activities discussed by Board members were within the accepted regulatory indications, in the East Asian countries of the Board members, for clinical activities that do not involve direct treatment of human patients or experimental activities on laboratory animals. These considerations allow for waiving any formal preliminary Institutional Review Board approval requirements. All authors are accountable for the clinical and editorial accuracy and integrity of the manuscript submitted to *Clinical, Cosmetic and Investigational Dermatology*. The authors confirm that they have adhered to the journal's ethical policies, as described in the guidelines for authors.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the *Clinical, Cosmetic and Investigational Dermatology* for their submission; and agreed to be accountable for all aspects of the work.

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