TOPBS
台灣乳房腫瘤手術整重建醫學會
Taiwan OncoPlastic Breast Surgery Society

Minimal Access Nipple Sparing Mastectomy

Consensus Meeting in Asian Breast Surgeons

Taiwan OncoPlastic Breast Surgery Society

2023 Annual Meeting TOPBS

2023. Nov. 26

Taipei International Convention Center

Content

2023
Annual Meeting
TOPBS


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Welcome Message

Oncoplastic breast surgery is a growing trend, especially in Asian countries, and it can be said that it's a continuously evolving surgical method. The oncoplastic surgical consensus established by the European and American medical communities in the past may not necessarily be applicable to us, due to differences in ethnicity, breast density, scar formation, and other conditions. Therefore, our association believes there is a need to form a surgical consensus that is applicable to Asian doctors and patients. This consensus covers 84 topics and has undergone two rounds of voting from expert and members from the TOPBS and TBCS to generate preliminary resolutions. Subsequently, it was further discussed face-to-face by experts and during the 2023 conference, resulting in the first version of the maNSM Asian consensus.

We are writing to convey our profound gratitude to the domestic and international experts and scholars actively participating in the voting process. The valuable contributions have been instrumental in shaping this critical consensus. Thanks all for your unparalleled commitment and invaluable insights.

Dr. Fiona Cheng Tsui-Fen
Chairman
Taiwan Oncoplastic Breast Surgery Society
25-26 November 2023


TOPBS

Preface

Minimal access nipple sparing mastectomy (maNSM) is a well-accepted surgical procedure for suitable early breast cancer surgery and provide the oncologic safety and healthy envelope for post-surgery reconstruction. As a gatekeeper of breast surgery, most of breast surgeons had experiences with maNSM and many institute-based maNSM papers had been published. However, there are many uncertainties and controversial issues still existed, such as duplicate and limited number of patients in most of the published papers with short-term follow up.

Through literature review, we collected the uncertainties regarding the indication, surgical approach, reconstruction methods, post-operative care, cosmetic evaluation and surveillance of maNSM. A total of 84 items of uncertainties were identified and categorized into 13 main topics. Through modified Delphi process with 2 rounds voting in panelists and members of TOPBS (Taiwan Oncoplastic Breast Surgery Society), the voting results and cross analysis were presented here.

The consensus issues of maNSM is different from previous one by Dr. Weber (Breast Cancer Res Treat, 2018) that we focused on Asian women with relative smaller breast-cap size in general, minimal invasive approach and more details on surgical techniques.

We expect to reach a maximun agreement among breast surgeons after the panelists on-site interpretation and comment in the 2023 Annual meeting of TOPBS.

Thanks for your full support.

Shin-Cheh Chen M.D

List of Panelists

Chairman	Fiona Tsui-Fen Cheng	鄭翠芬
Co-chairman	Shin-Cheh Chen	陳訓徹
Panelists	Eisuke Fukuma	福間英祐
	Kenta Tanakura	棚倉健太
	Ho Yong Park	朴鎬用
	Hyung Seok Park	朴炯碩
	Sharon Chan	陳穎懷
	Shou-Tung Chen	陳守棟
	Yao-Lung Kuo	郭耀隆
	Hung-Wen Lai	賴鴻文
	Chiun-Sheng Huang	黃俊升
	Jyh-Cherng Yu	兪志誠
	Chin-Sheng Hung	洪進昇
	Hsu-Huan Chou	周旭桓
	Cheng-Che Wu	巫承哲

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	黃其晟 Chi-Cheng Huang	謝家明 Chia-Ming Hsieh
正/副秘書長 Secrectary General/ Deputy Secrectary General	巫承哲 Cheng-Che Wu	陳柵君 Cha-Chun Chen

Consensus of Minimal Access Nipple Sparing Mastectomy for Early Breast Cancer

1) Purpose

To define the evidence-based experts consensus recommendation for minimal access nipple sparing mastectomy (NSM) and propose the choice of surgery for minimal access to NSM

2) Methods

Search the evidence-based approach of NSM and raise the questionnaires of uncertainties and controversies through online conference and discussion. The collected controversial issues then send to members of Taiwan Oncoplastic Breast Surgery Society (TOPBS) and all panelists in two rounds (as modified Delphi process).

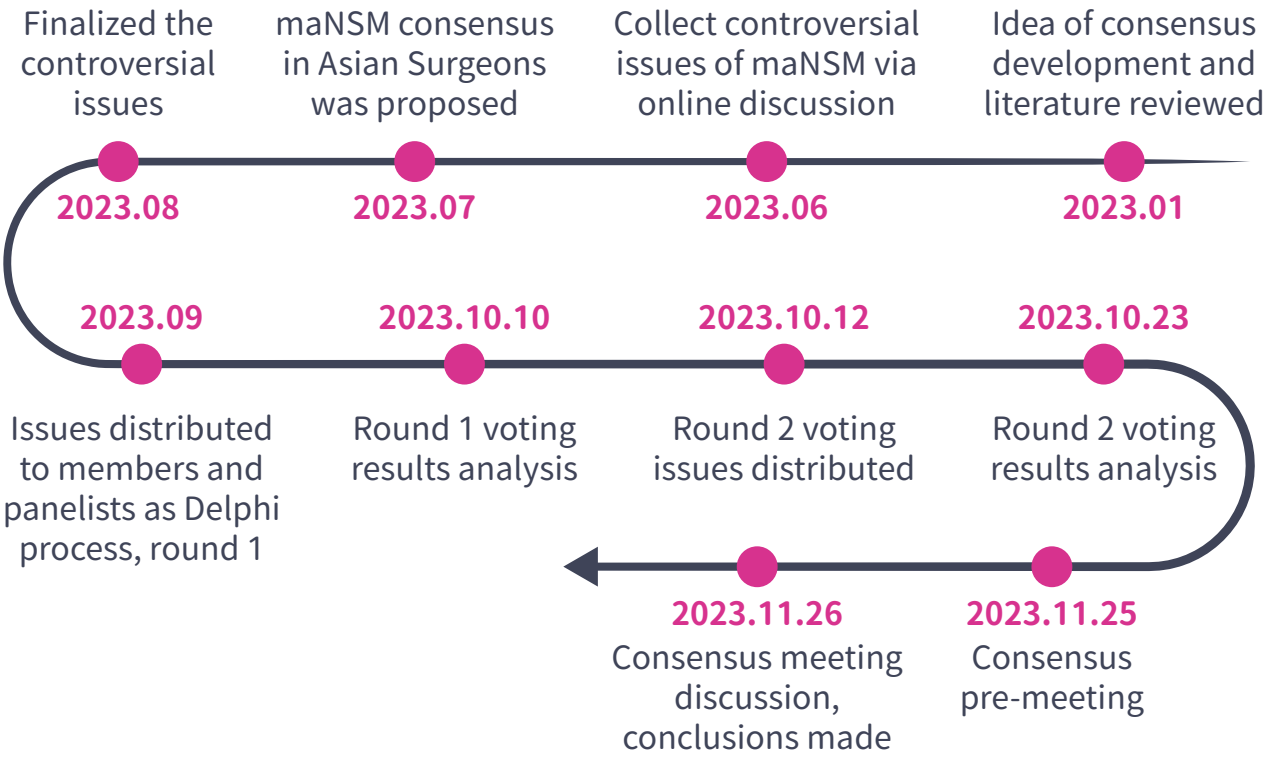
For the uncertainty or controversial issues, there are totally 85 items been categorized into four main groups, as basic personal data, consensus issues, personal experiences and case scenarios, 13 working main topics. (details in attached file).

3) Delphi process

The modified Delphi process will include two rounds of surveys.

- Round 1：The organizers will send out personalized access links to the electronic.
- Round 2：receive a second personalized access link to the electronic round 2 questionnaire. The round 2 questionnaire will consist of the same list of uncertainties and preliminary analysis data in round 1. In addition, participants will then be asked to complete the questionnaire again within two weeks to reprioritize.

4) Timeline of minimal access NSM (maNSM)



5) Statistical analysis and definition of consensus

5.1 Definition of consensus by voting results.

- Consensus：≧75% agree.
- Majority：51~74% agree.
- No：≦50% agree.

5.2 The category of consensus answer summarized as supplemental Table 1.

Consensus Main Topics

1 Panel's personal background

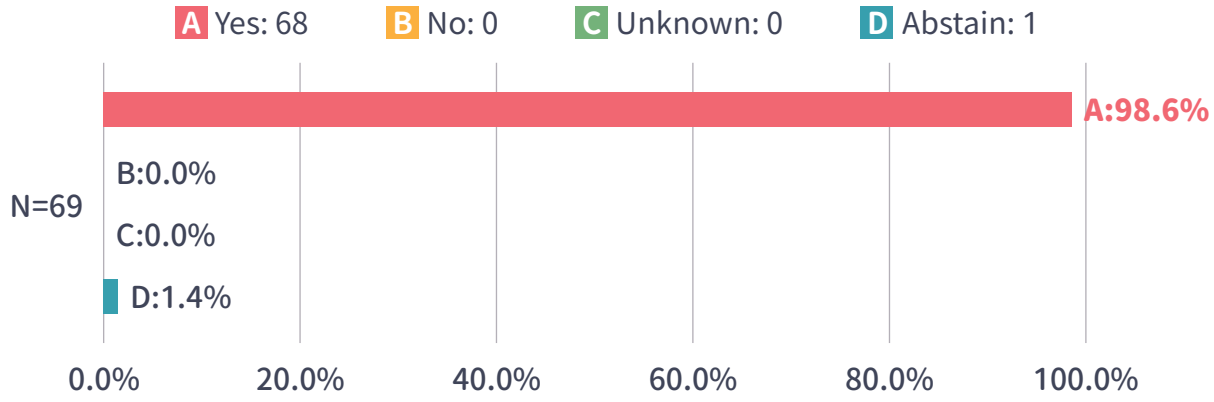
Characteristics	Number	%
Item 1. Sex		
Male	52	75.4
Female	17	24.6
Item 2. Age (years)		
30~50	39	56.6
51~60	13	18.8
61~70	12	17.4
>70	5	7.2
Item 3. Clinical practice		
Academic Center	46	66.7
Community Teaching Hospital	20	29.0
Community Hospital	3	4.3
Item 4. Experience in breast cancer surgery (years)		
0~5	7	10.1
6~10	13	18.8
11~20	22	32.0
20~30	12	17.4
>30	15	21.7

2. The difference between Asian and Western women breast cancer
3. In general, indications
4. Surgical skill
5. Reconstruction
6. Radiation
7. Complication prevention
8. Post-operative care
9. Special consideration
10. Oncological safety and surveillance
11. Cosmesis evaluation
12. Quality of life, satisfaction and patient reported outcome
13. Training and implementation

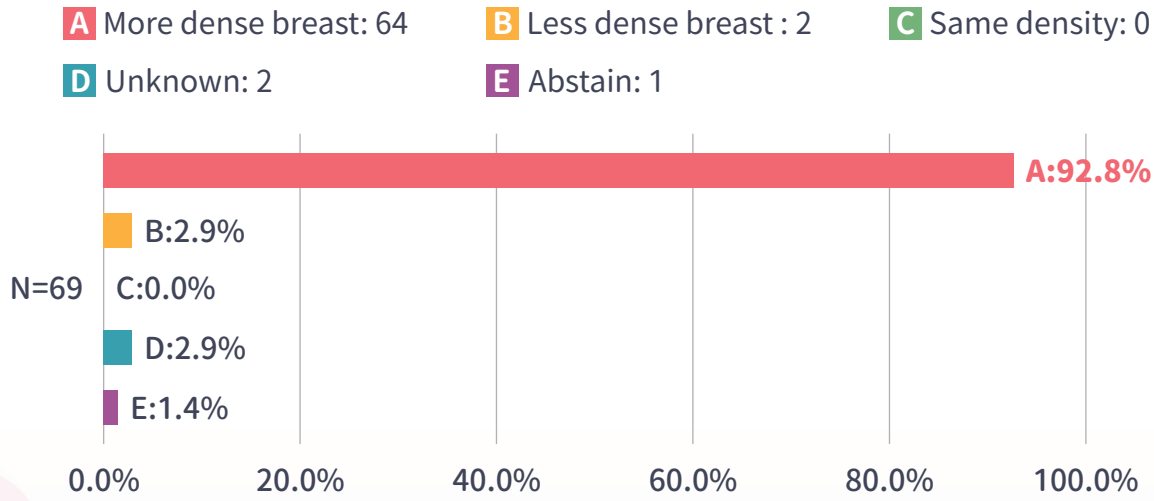
Items of consensus (≧75 % agreement) and no-consensus

A. Consensus items ~ ≧75 %

Item 5. 2-1 Difference of breast cup size between Asian and Western

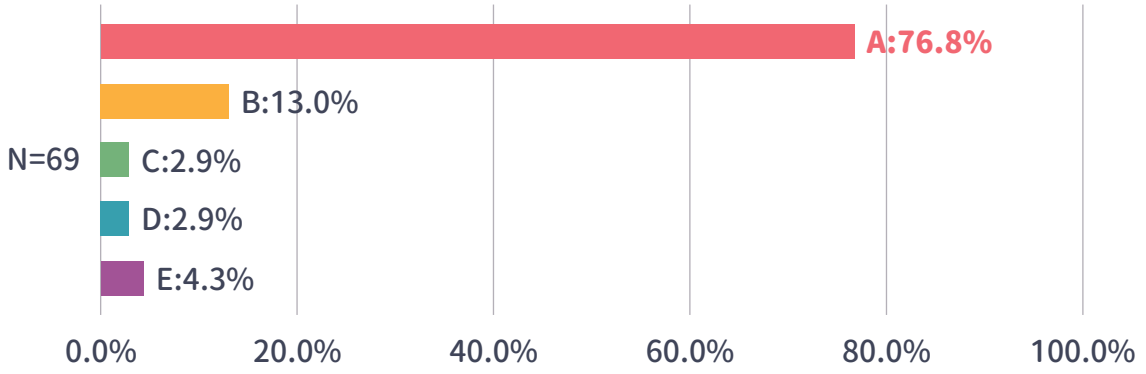


Item 6. 2-2 For breast density, Asian women with



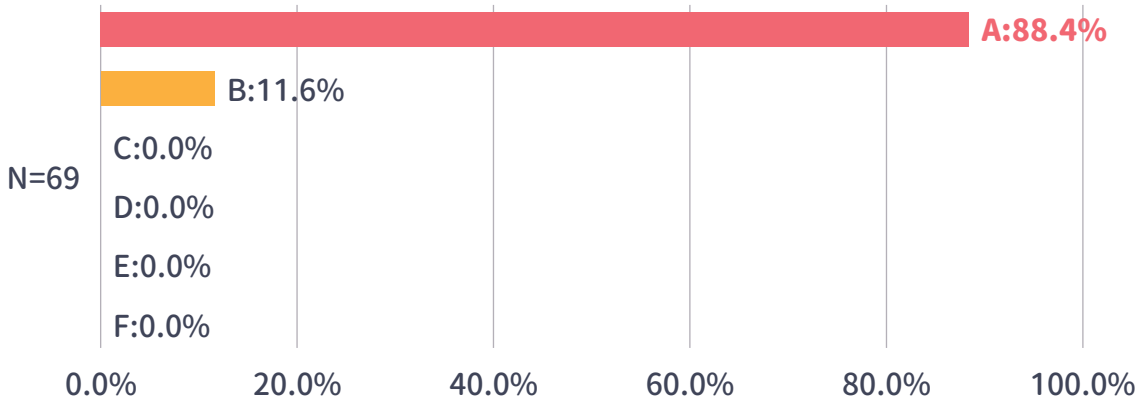
Item 8. 2-4 In younger female breast cancer, the positivity of estrogen receptors is

A Higher than 50%: 53　B Below 50%: 9　C Same as older: 2
D Unknown: 2　E Abstain: 3



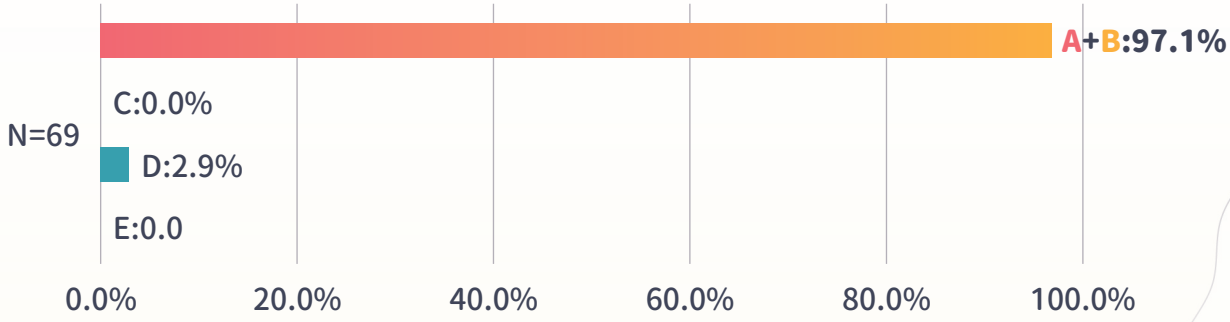
Item 12. 3-2 For patients receive nipple sparing mastectomy, your attitude is

A Accept and recommend: 61　B Accept but not recommend: 8　C Not accept: 0
D Against: 0　E Unknown : 0　F Abstain : 0



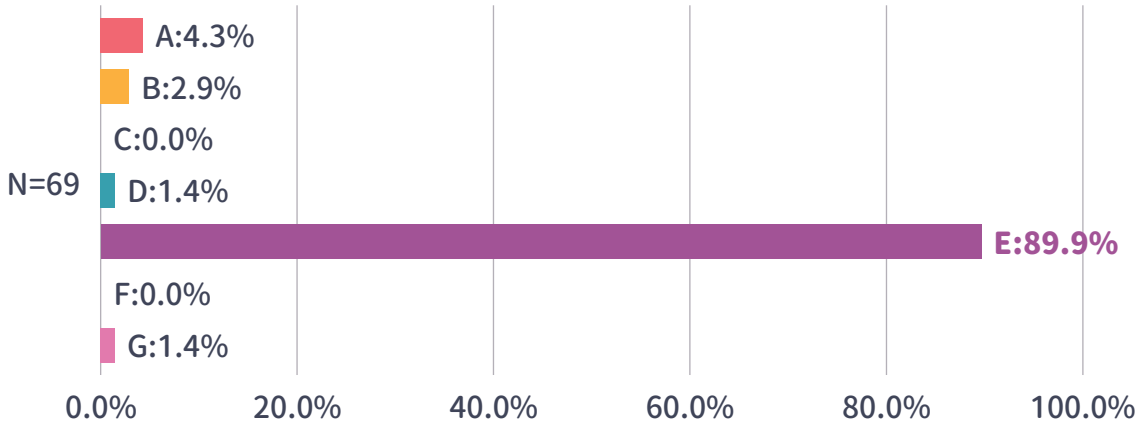
Item 13. 3-3 In minimal access to nipple sparing mastectomy, you attitude is

A Agree: 21　B Agree, but in condition such as tumor location and size: 46
C Against: 0　D Unknown: 2　E Abstain: 0



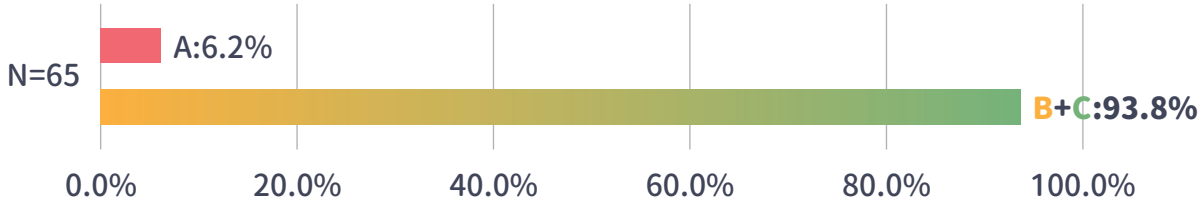
Item 19. 3-9 Clinically, absolute contraindicated to preserve the nipple is (limited to selecting only one)

A Nipple-tumor distance < 2cm: 3
B Nipple bloody or serous discharge: 2
C Lange tumor size and positive node: 0
D BRCA1/2 carrier: 1
E Nipple involved clinically: 62
F Unknown: 0
G Abstain: 1



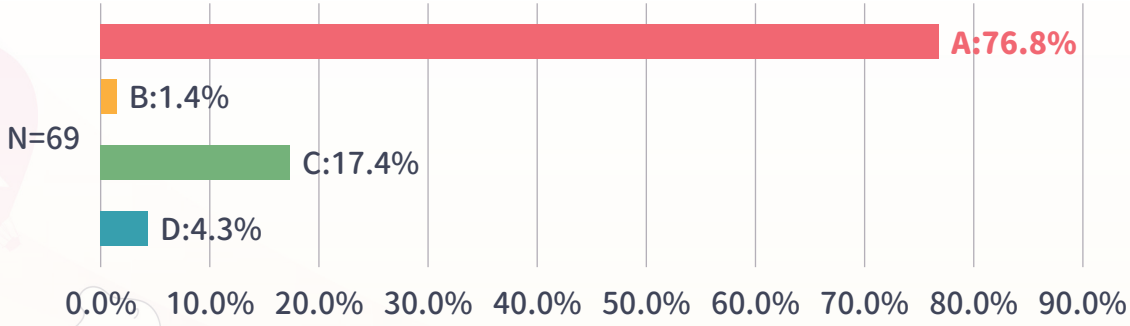
Item 27. 4-8 To obtain margin free, you will do frozen section

A Not at all: 4
B Nipple core only: 43
C Tumor margin and nipple core: 18
D Unknown: 0
E Abstain: 4



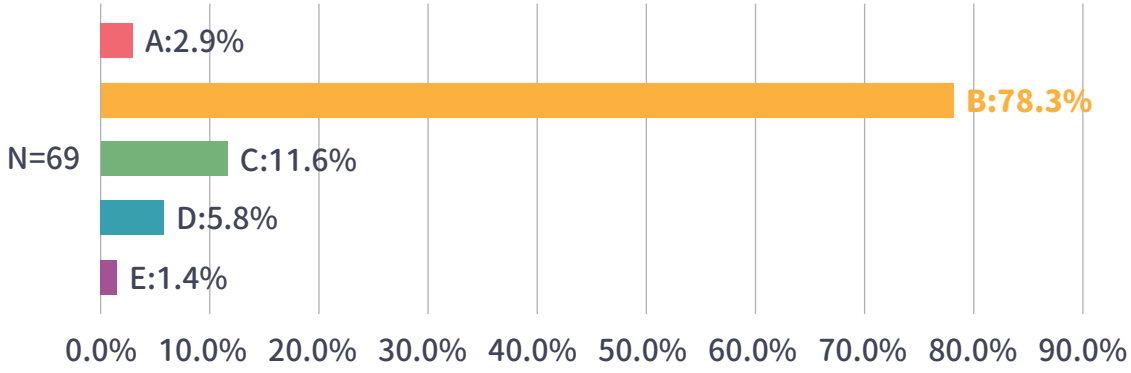
Item 33. 5-2 Who perform the reconstruction in your team

A Plastic surgeon: 53
B Another breast surgeon: 1
C All by myself: 12
D Abstain: 3



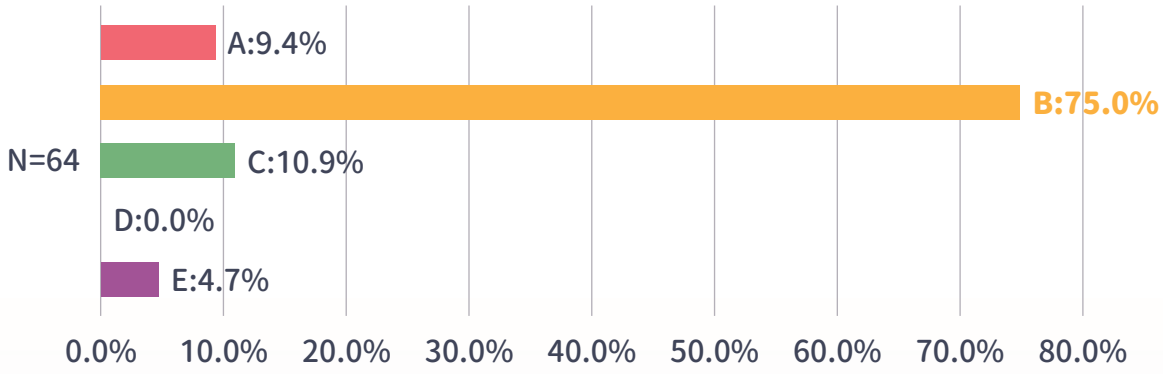
Item 44. 6-4 A young lady breast cancer patient plan to receive nipple sparing mastectomy and plan post-mastectomy radiotherapy, in your opinion, the delayed reconstruction is contraindication

A Yes: 2 B No: 54 C Depends on other factor: 8
D Unknown: 4 E Abstain: 1



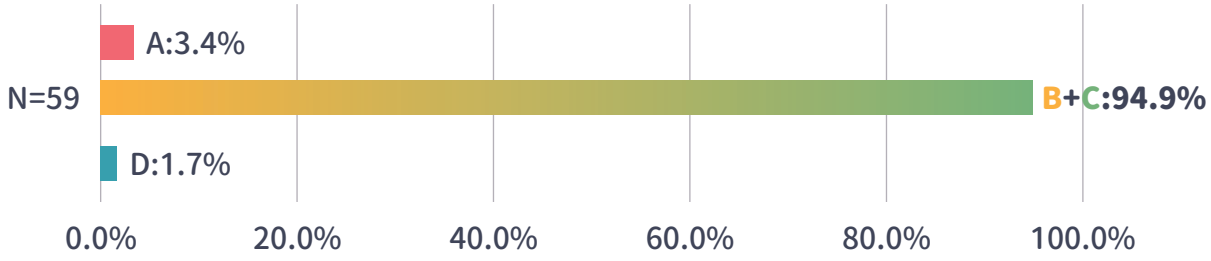
Item 49. 7-1 In your observation, the most important risk factor of mastectomy skin flap necrosis is (limited to selecting only one)

A Location of skin incision: 6 B Skin flap thickness: 48
C Dissection method (scissor, electrocautery, hydro dissection, etc): 7
D Approach method (conventional, endoscopic, robot-assisted, etc): 0
E Reconstruction (tissue expander, implant, free flap, etc): 3
F Others: 1 G Abstain: 4



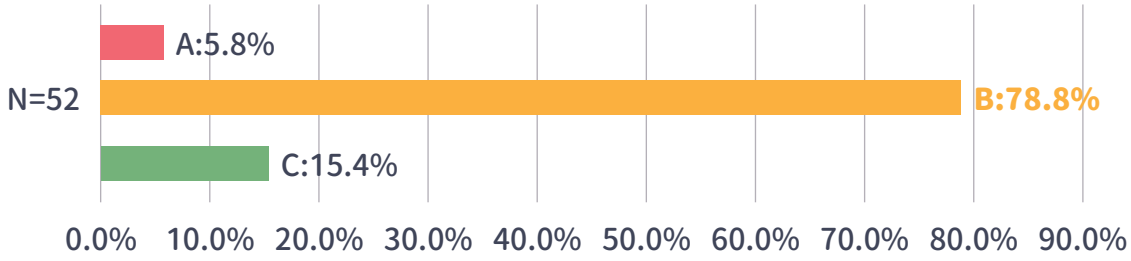
Item 50. 7-2 Do you perform preoperative angio or indocyanine green (ICG) perfusion study to identify any impairment of blood supply to skin envelope

A Yes: 2
B No, except high risk such as old age, heavy smoker: 14
C Always no: 42
D Usage of other method: 1
E Unknown: 5
F Abstain : 5



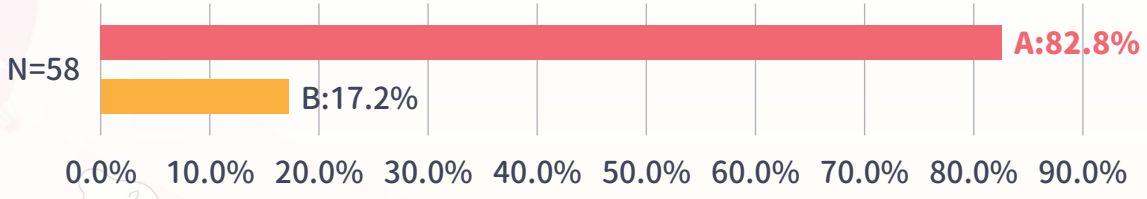
Item 58. 8-2 The negative pressure vacuum ball drain on chest wall and axillary fossa after nipple sparing mastectomy with immediate reconstruction, should be need with

A High pressure: 3
B Low pressure: 41
C Either: 8
D Unknown: 12
E Abstain: 5

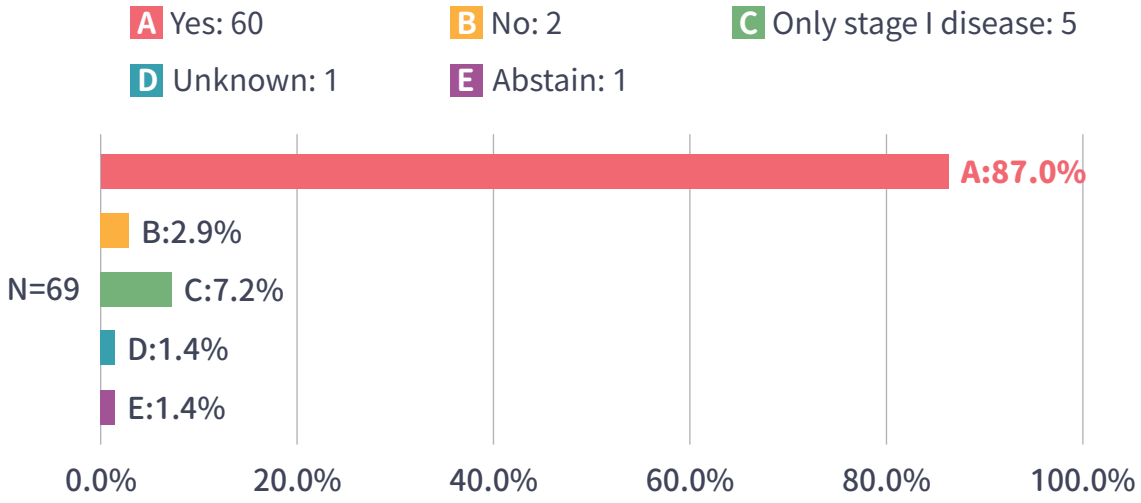


Item 65. 9-1 For a lady breast cancer patient with BRCA1/2 mutation age <40 years, your judgement of indication for nipple sparing mastectomy in comparison to wild type is

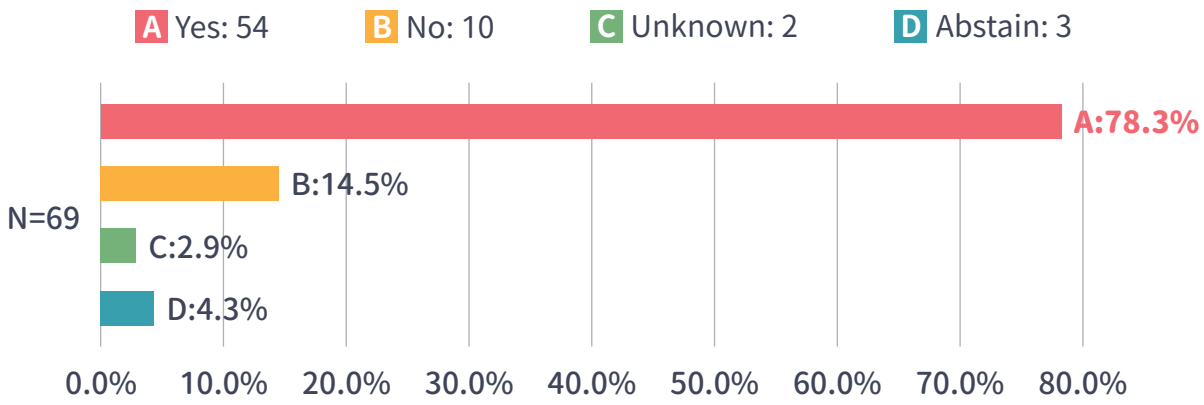
A The same: 48
B Always no nipple preservation: 10
C No immediate reconstruction: 5
D No implant-based reconstruction: 0
E Unknown: 2
F Abstain: 4



Item 67. 10-1 Do you accept that the oncological safety of nipple sparing mastectomy in comparable to conventional mastectomy

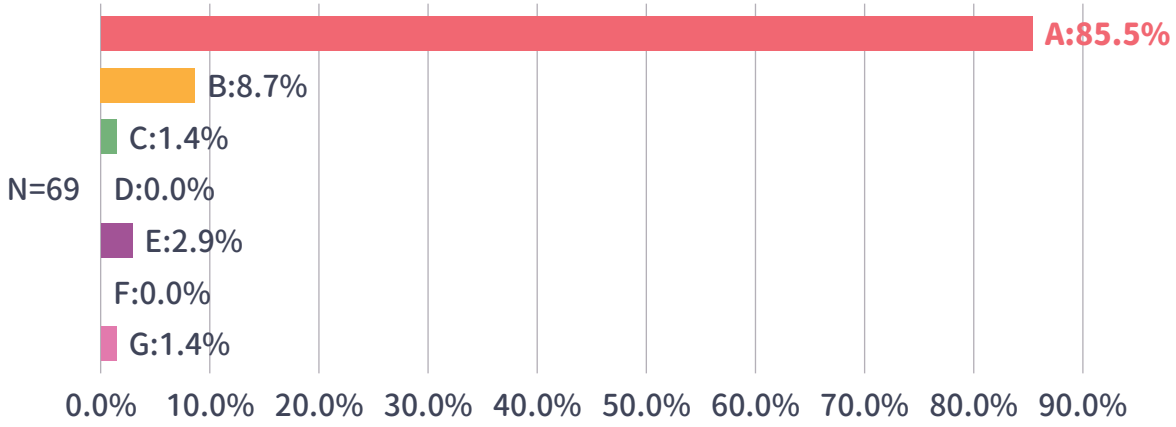


Item 68. 10-2 In clinical surveillance of your medical records, is the nipple-areolar relapse, local skin relapse and regional nodal relapse are recorded separately



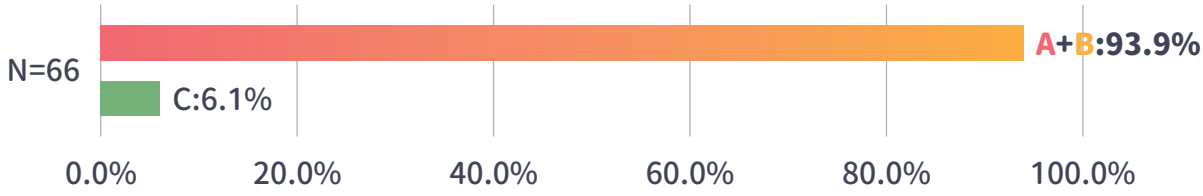
Item 70. 10-4 In clinical surveillance for ipsilateral site after nipple sparing mastectomy, breast ultrasound is suggested

A Every 6 months: 59 B Every year: 6 C Every 2 years: 1 D Not suggested: 0
E Depends on other factor: 2 F Unknown: 0 G Abstain: 1



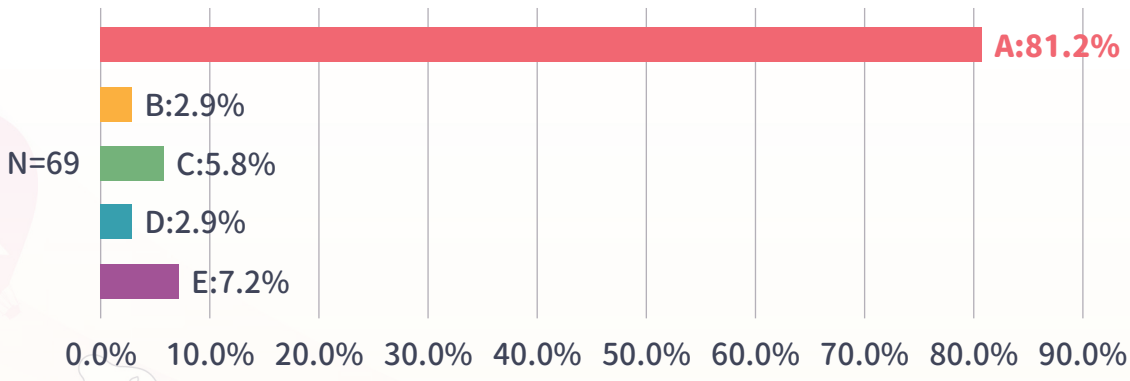
Item 75. 11-4 About your opinion, the invisible scar in cosmetic evaluation after nipple sparing mastectomy is

A Very important: 14 B Important: 48 C Not Important: 4
D Unknown: 1 E Abstain: 2



Item 84. 13-3 Will you implement the idea of nipple sparing mastectomy to your colleague

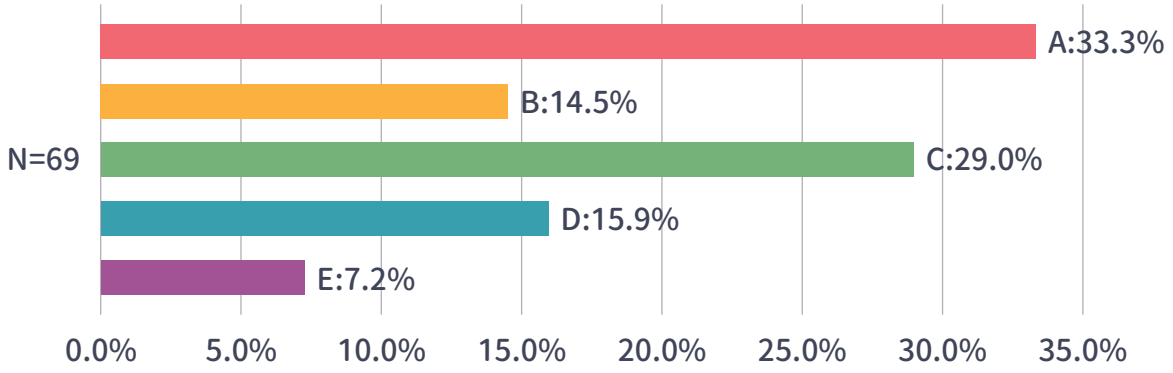
A Yes: 56 B No: 2 C Later: 4 D Unknown: 2 E Abstain: 5



B. No consensus items ~ < 50%

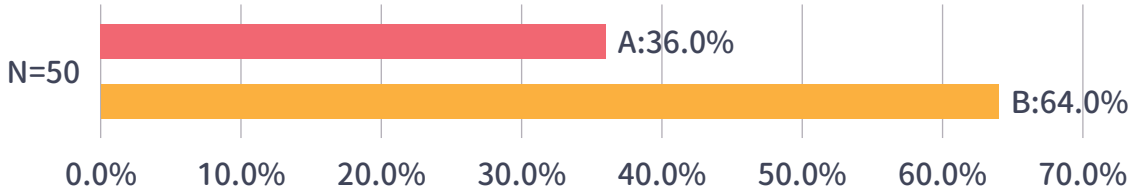
Item 7. 2-3 For tumor biology, the Asian woman breast cancer is

A More aggressive: 23 B More favorable: 10 C Same: 20
D Unknown: 11 E Abstain: 5



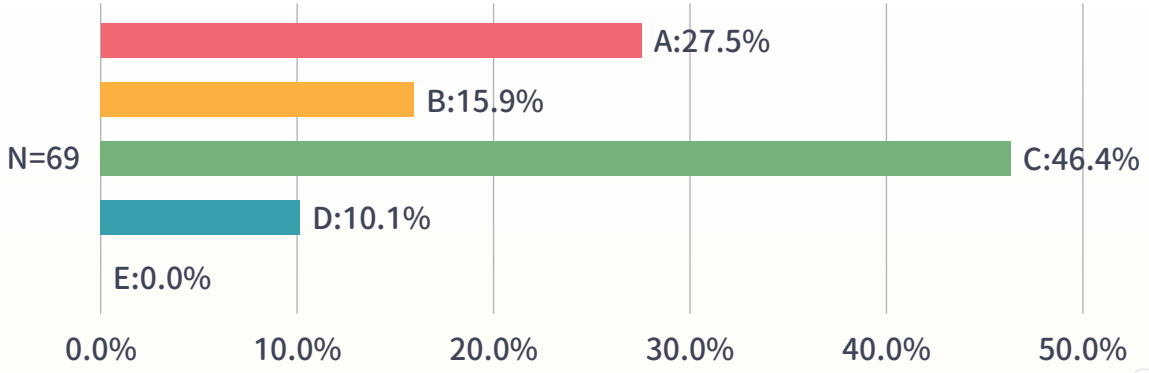
Item 9. 2-5 For demand of cosmetic results, the Asian women is

A More focus: 18 B Less focus: 32 C Unknown: 12
D Abstain: 6 E Same as western: 1



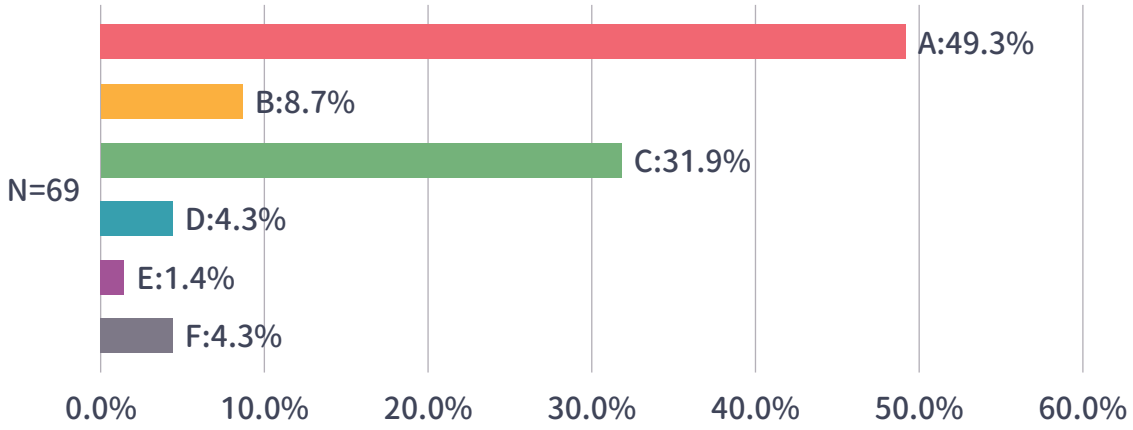
Item 10. 2-6 Overall, the surgical skill for Asian breast cancer patients in comparison to Western is

A Same: 19 B Different and easier: 11 C Different and more difficulty: 32
D Unknown: 7 E Abstain: 0



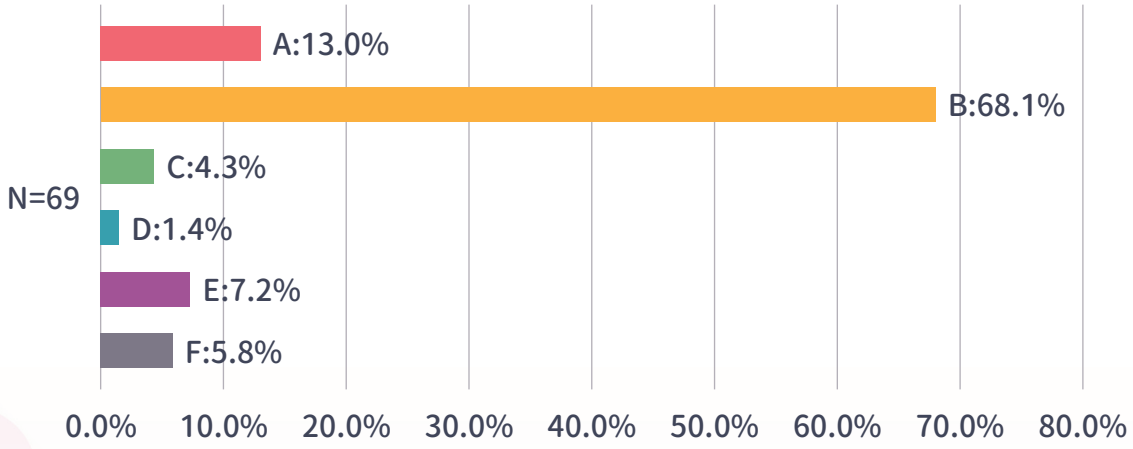
Item 14. 3-4 Your preference of skin incision in minimal access nipple sparing mastectomy

A Depends on tumor location: 34
B Peri-areolar: 6
C Axillary line: 22
D Inframammary fold: 3
E Other: 1
F Abstain: 3



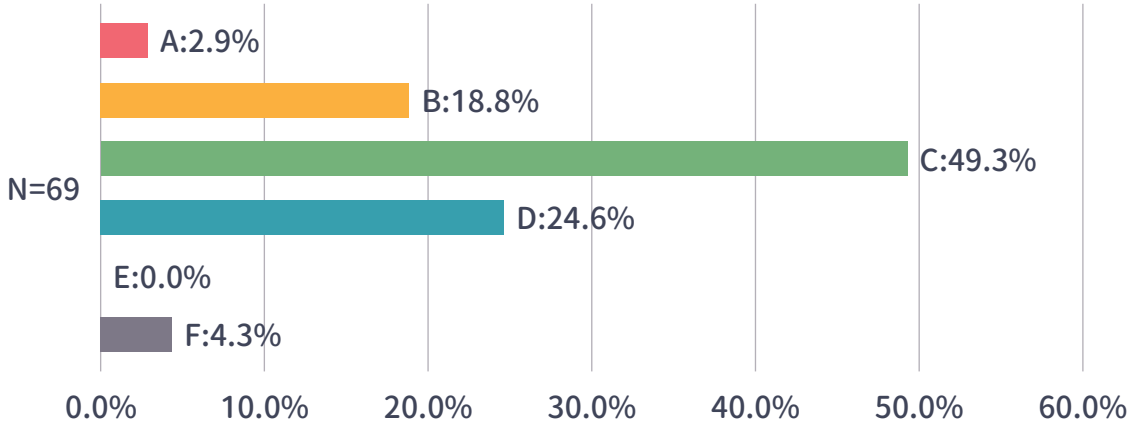
Item 15. 3-5 Follow above question, your preference method of nipple sparing mastectomy is based on following considerations (the most important one)

A Skin-flap complications: 9
B Tumor margin free or not: 47
C Ergonomics: 3
D Cost-effective: 1
E No experience of Robot or endoscopic: 5
F Abstain: 4



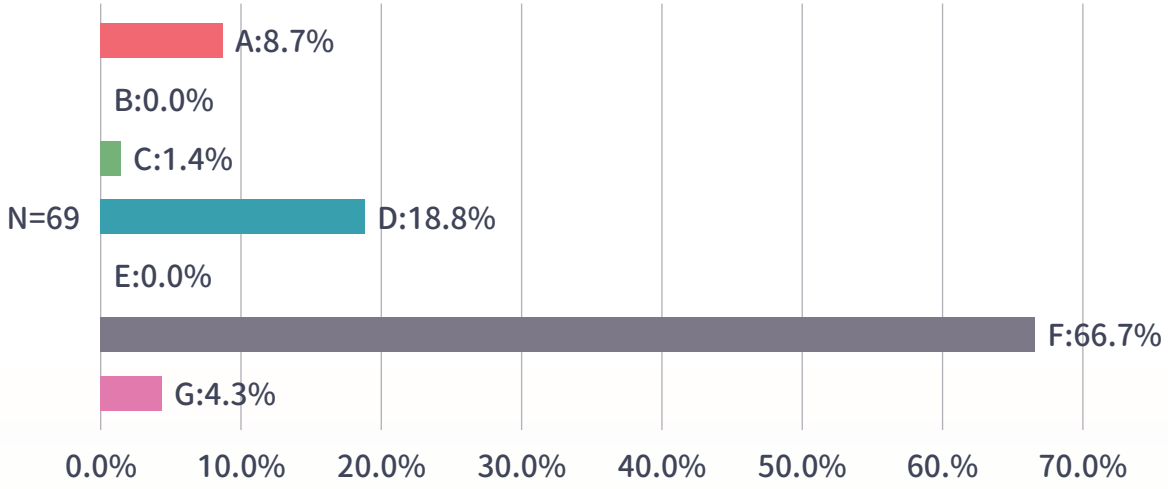
Item 16. 3-6 For invasive cancer, the indication for nipple sparing mastectomy is (if nipple not involved)

A Large tumor size, no response to neoadjuvant chemotherapy: 2
B Regional calcifications not suitable for conserving surgery: 13
C A or B: 34
D Any tumor size once patient preference: 17
E Unknown: 0
F Abstain: 3

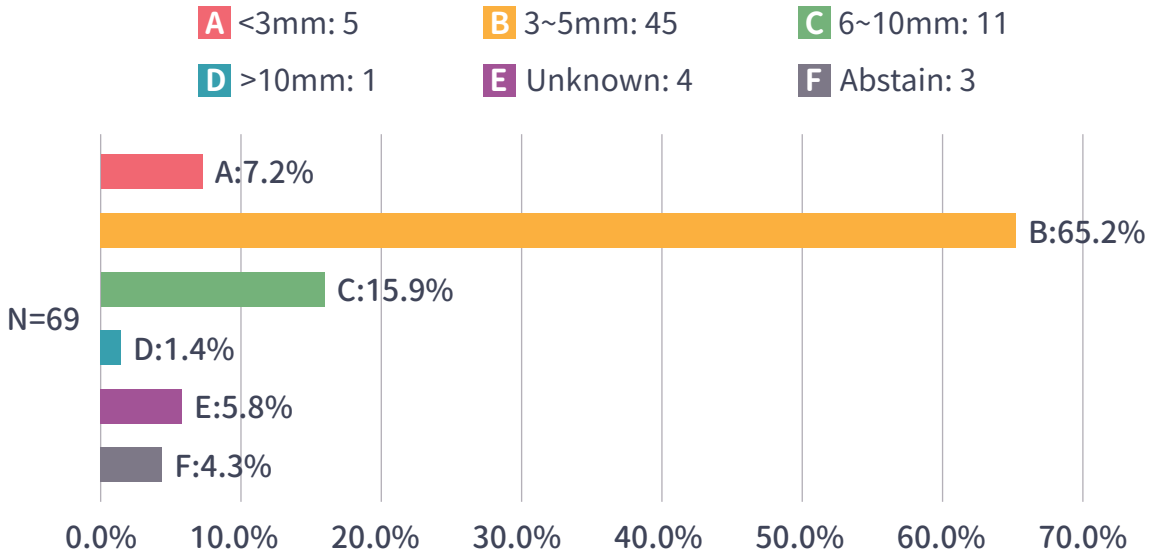


Item 17. 3-7 To make sure either nipple was involved or not, your decision to preserve nipple will depends on the findings of

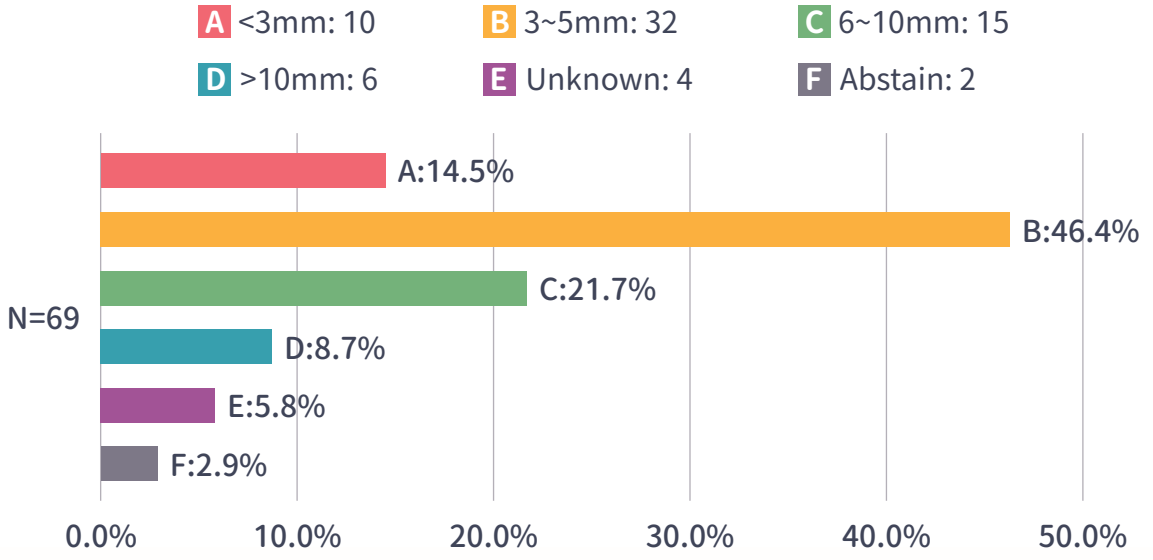
A MRI: 6
B Mammography: 0
C Ultrasound: 1
D Mammography and ultrasound: 13
E Contrast mammography: 0
F All image findings: 46
G Abstain: 3



Item 23. 4-4 The thickness of skin flap of nipple sparing mastectomy in your practice is usually

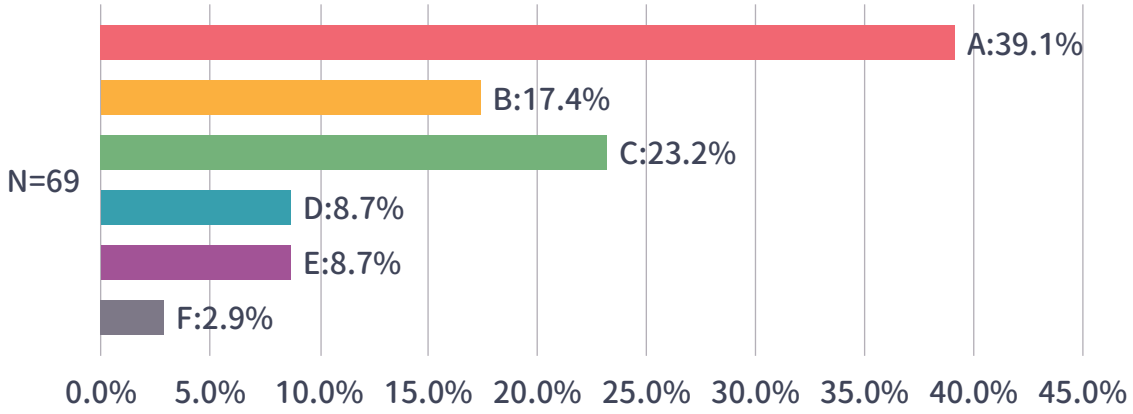


Item 24. 4-5 The thickness of areolar complex area in nipple sparing mastectomy is about usually



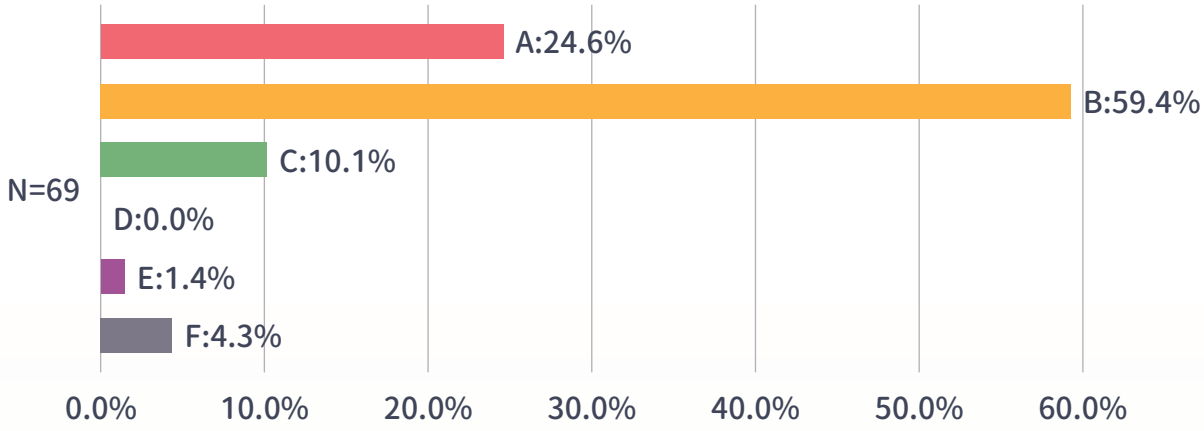
Item 26. 4-7 In your opinion, which approach method of nipple sparing mastectomy is the best modality to complete removal all the breast glandular tissue

A All the same: 27
B Conventional: 12
C Endoscopic: 16
D Robot assisted: 6
E Unknown: 6
F Abstain: 2

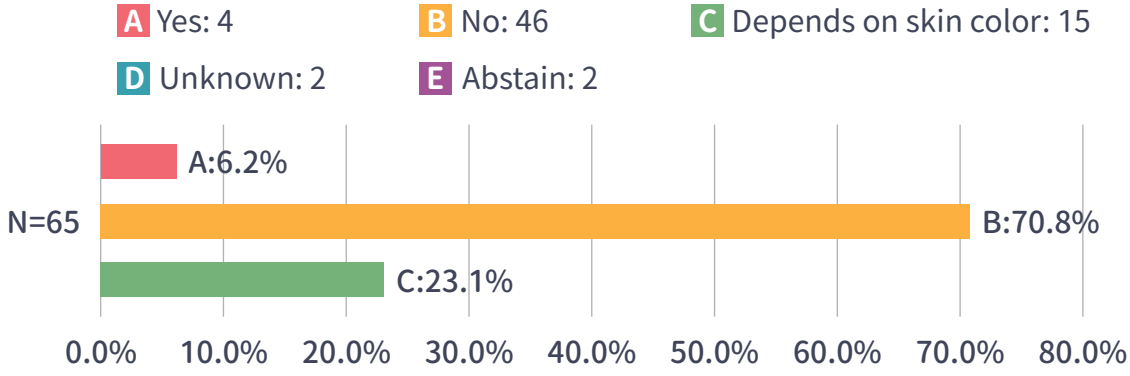


Item 28. 4-9 Your next step, if positive nipple margin on frozen section intraoperatively

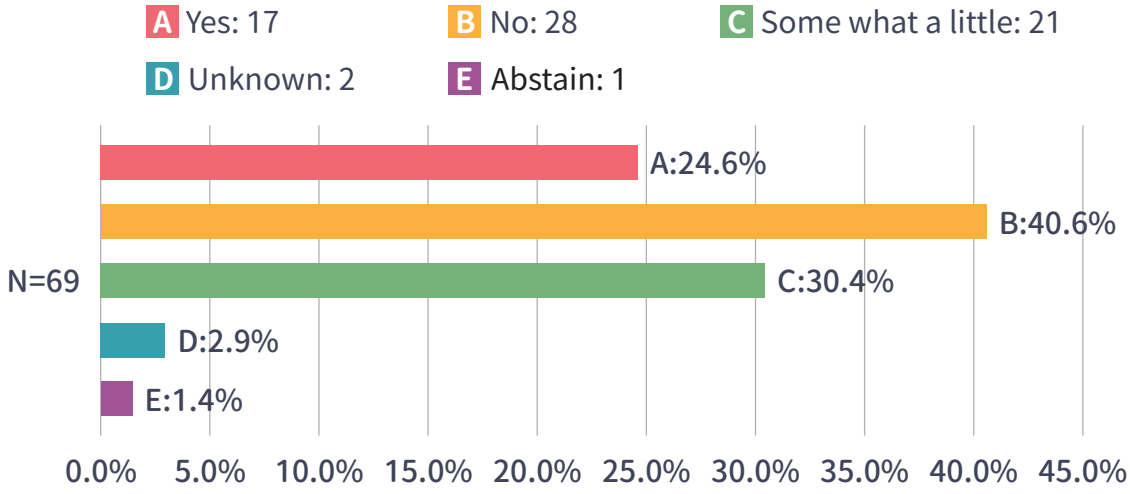
A More dissection to remove the residual tissue inside the nipple except the skin: 17
B Excision nipple-areolar complex: 41
C Excision nipple only: 7
D No further action, plan further adjuvant radiotherapy: 0
E Unknown: 1
F Abstain: 3



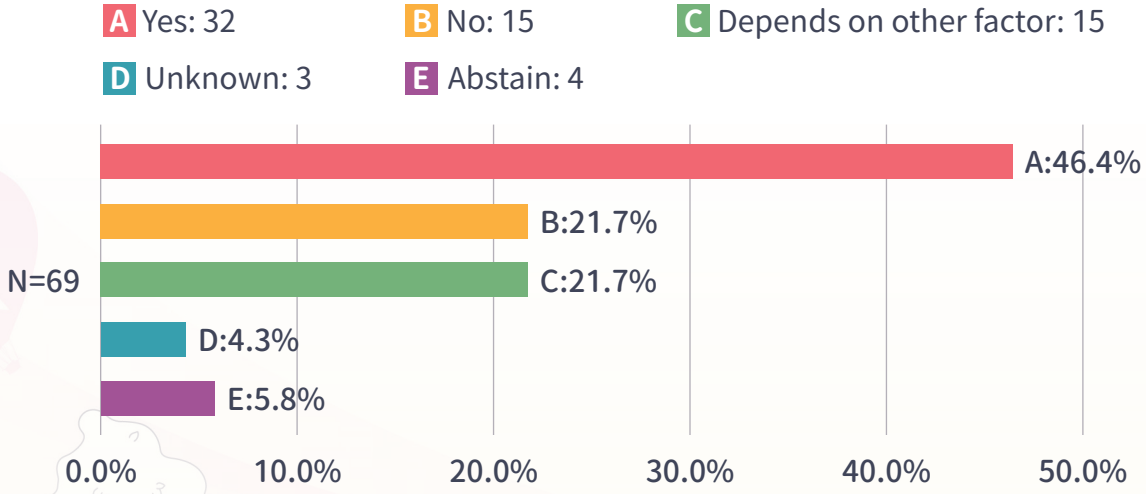
Item 31. 4-12 Do you routinely check the perfusion of skin flap with Indocyanine green (ICG) in clinical practice?



Item 32. 5-1 The immediate reconstruction (any type) have potential oncological safety impact by delaying adjuvant therapy

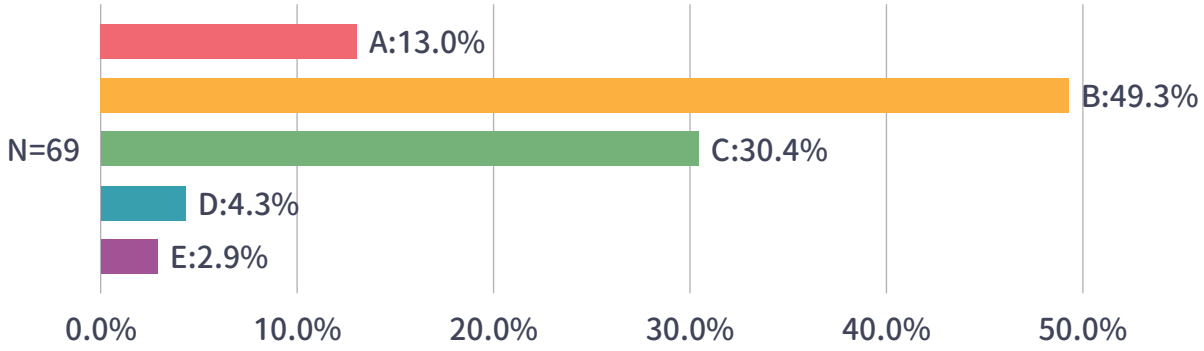


Item 41. 6-1 A young lady breast cancer patient plan to receive nipple sparing mastectomy and plan post-mastectomy radiotherapy, in your opinion, the immediate pre-pectoral implant-based reconstruction is contraindication



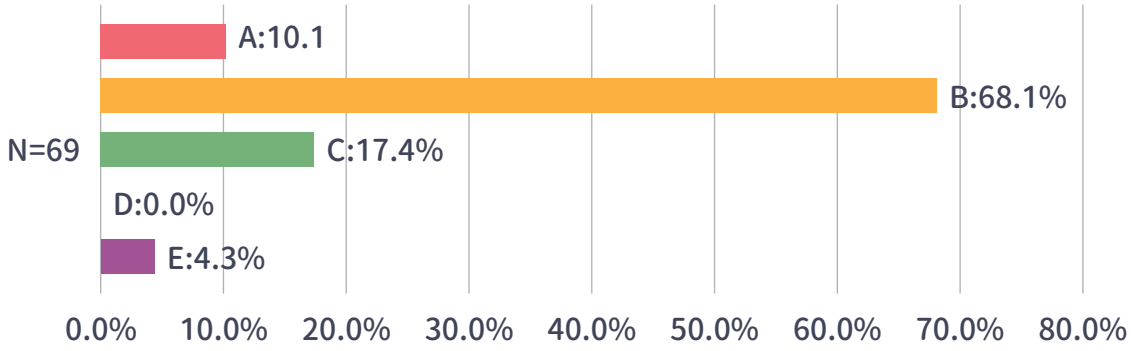
Item 42. 6-2 A young lady breast cancer patient plan to receive nipple sparing mastectomy and plan post-mastectomy radiotherapy, in your opinion, the immediate sub-pectoral implant-based reconstruction is contraindication

A Yes: 9 B No: 34 C Depends on other factor: 21
D Unknown: 3 E Abstain: 2



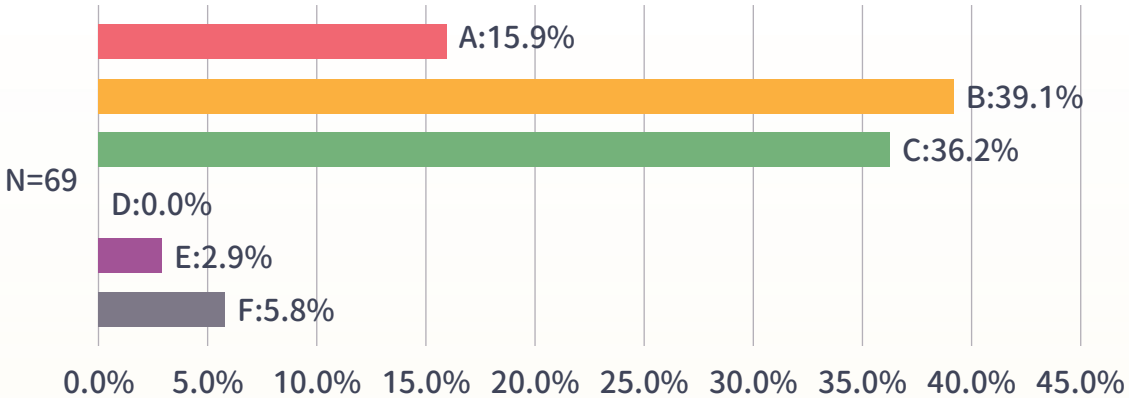
Item 43. 6-3 A young lady breast cancer patient plan to receive nipple sparing mastectomy and plan post-mastectomy radiotherapy, in your opinion, the immediate autologous flap reconstruction is contraindication

A Yes: 7 B No: 47 C Depends on other factor: 12
D Unknown: 0 E Abstain: 3



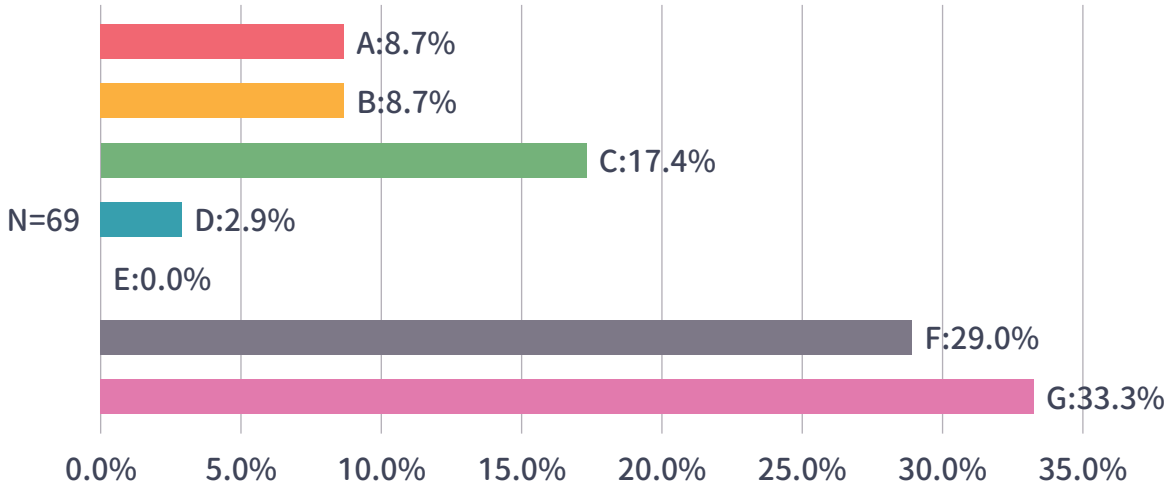
Item 45. 6-5 Your concern about the complications of post-mastectomy radiotherapy after nipple sparing mastectomy is (limited to selecting only one)

A Increase skin-flap complication: 11 B Increase reconstruction complication: 27
C Affect cosmetic outcome: 25 D Cost: 0 E Unknown: 2 F Abstain: 4



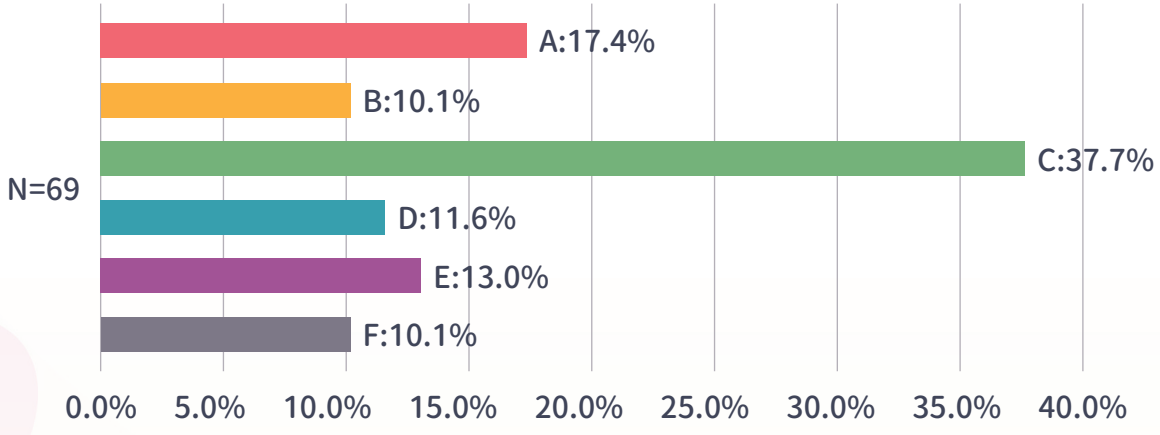
Item 46. 6-6 Your preference of implant-based reconstruction for patients plane to receive post mastectomy radiotherapy after nipple sparing mastectomy is (limited to selecting only one)

A Any type: 6
B Highly cohesive implant: 6
C Smooth implant: 12
D Polyurethane implant: 2
E Synthetic mesh: 0
F Unknown: 20
G Abstain: 23



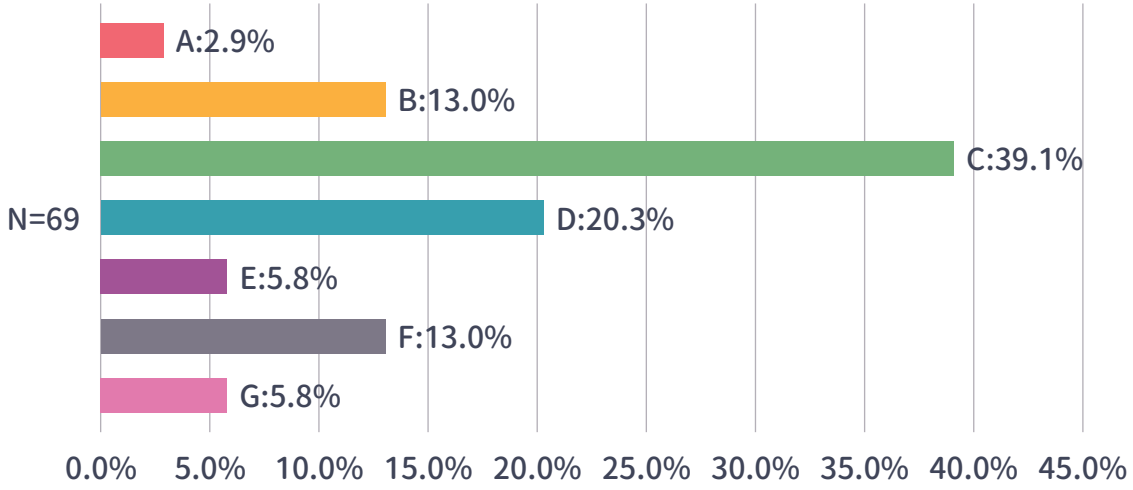
Item 47. 6-7 To apply hypofractionated radiotherapy, the adverse events in comparison to conventional radiotherapy is

A The same: 12
B Increase: 7
C Decrease: 26
D Depends on other factor: 8
E Unknown: 9
F Abstain: 7



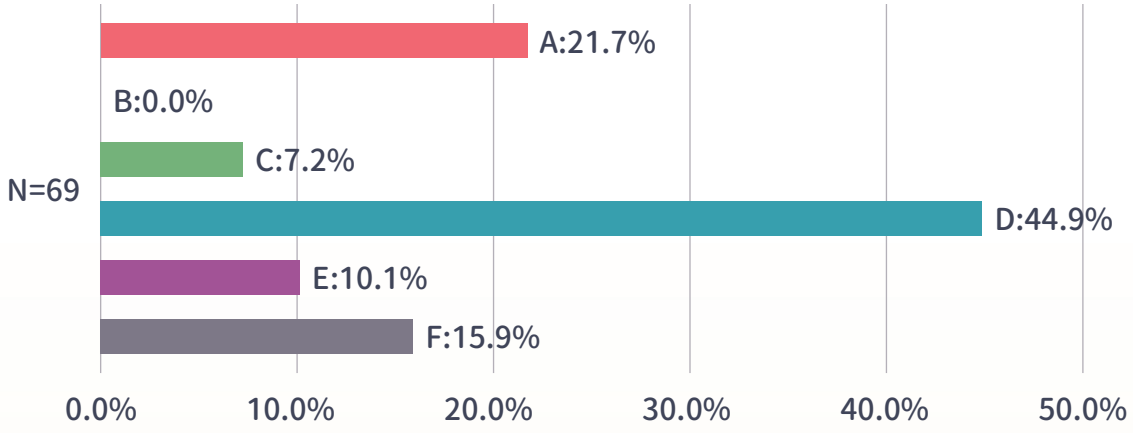
Item 48. 6-8 The optimal interval of delayed reconstruction after post-mastectomy radiotherapy is

A Less than 3 months: 2
B 3 months later: 9
C 6 months later: 27
D 12 months later: 14
E 24 months later: 4
F Unknown: 9
G Abstain: 4



Item 51. 7-3 The skin flap discoloration happen immediately at recovery room of operation theater, your action to differentiate poor arterial perfusion or poor venous return is

A Doppler ultrasound: 15
B Angio study: 0
C Repeat ICG injection: 5
D Clinical judgement: 31
E Unknown: 7
F Abstain: 11

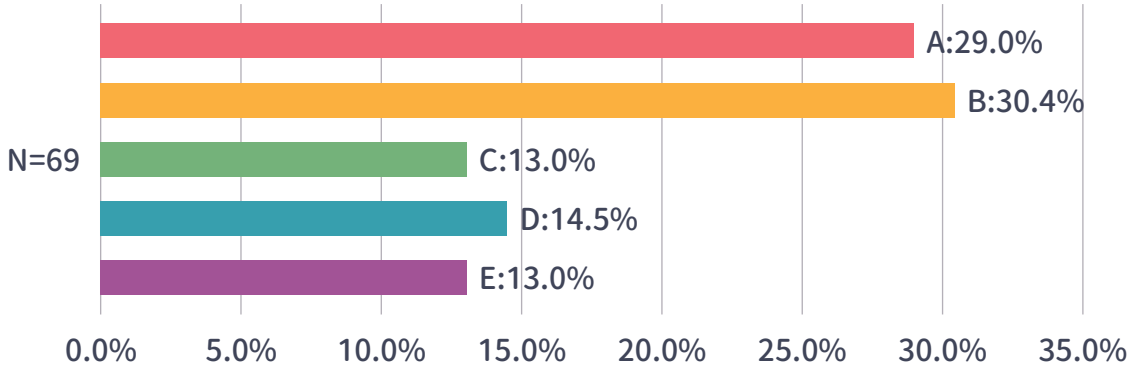


Item 52. 7-4 The following medication might help to improve the perfusion of skin flap after nipple sparing mastectomy

7-4-1 Light manual massage

A Yes: 20　B No: 21　C Depends on artery or vein impairment: 9

D Unknown: 10　E Abstain: 9

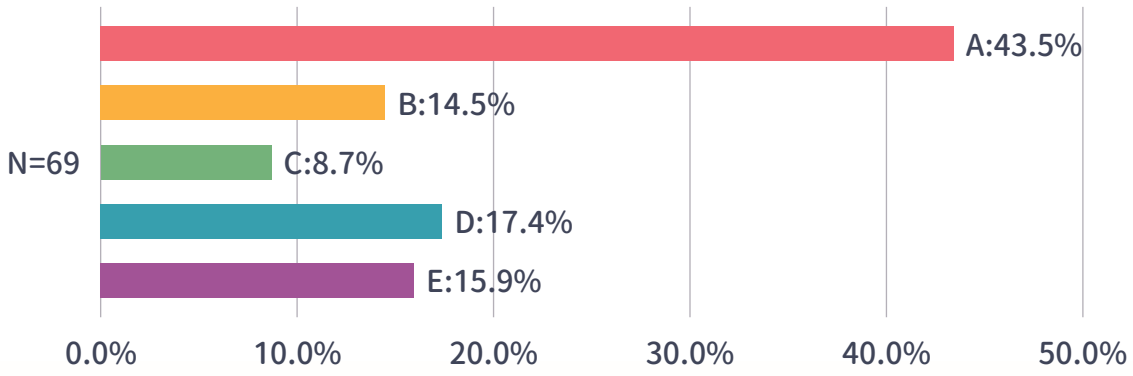


Item 53. 7-4 The following medication might help to improve the perfusion of skin flap after nipple sparing mastectomy

7-4-2 Low molecular weight dextran

A Yes: 30　B No: 10　C Depends on artery or vein impairment: 6

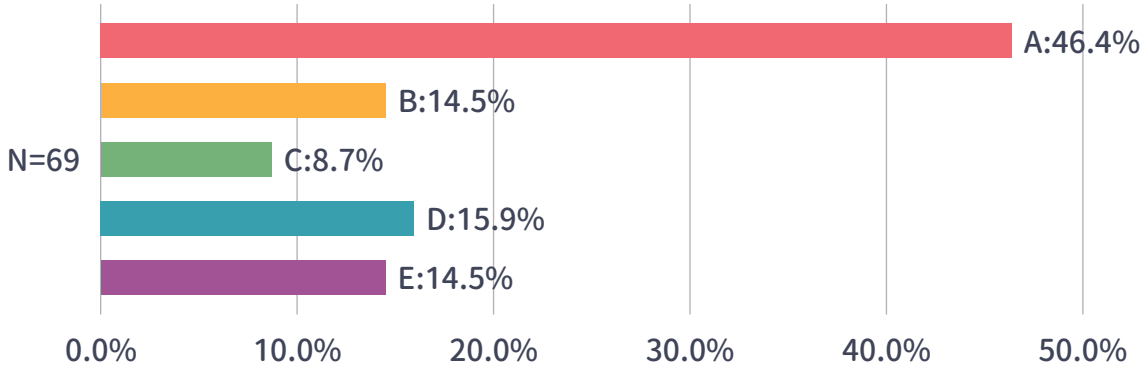
D Unknown: 12　E Abstain: 11



Item 54. 7-4 The following medication might help to improve the perfusion of skin flap after nipple sparing mastectomy

7-4-3 Prostaglandin

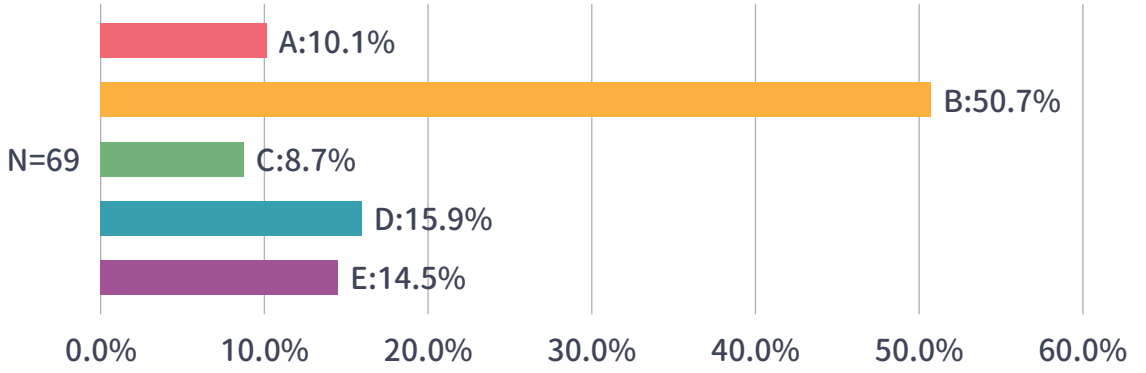
A Yes: 32 B No: 10 C Depends on artery or vein impairment: 6
D Unknown: 11 E Abstain: 10



Item 55. 7-4 The following medication might help to improve the perfusion of skin flap after nipple sparing mastectomy

7-4-4 Transamin

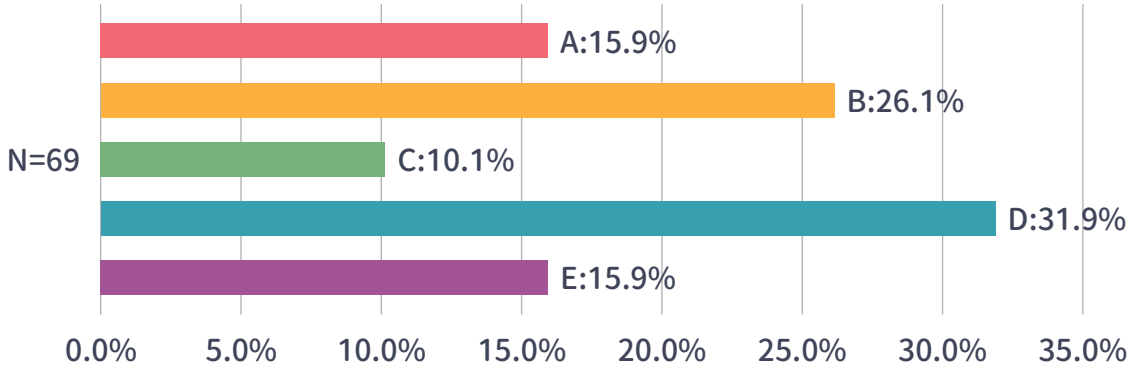
A Yes: 7 B No: 35 C Depends on artery or vein impairment: 6
D Unknown: 11 E Abstain: 10



Item 56. 7-4 The following medication might help to improve the perfusion of skin flap after nipple sparing mastectomy

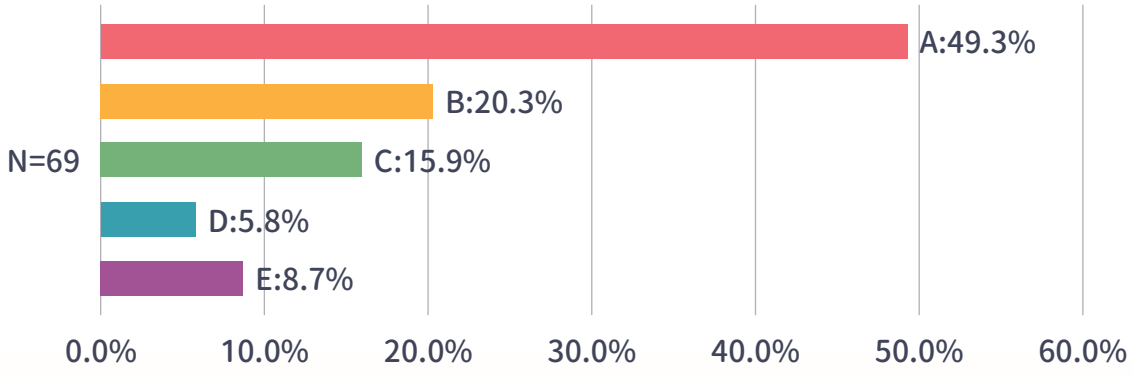
7-4-5 Nitroglycerin

A Yes: 11 B No: 18 C Depends on artery or vein impairment: 7
D Unknown: 22 E Abstain: 11



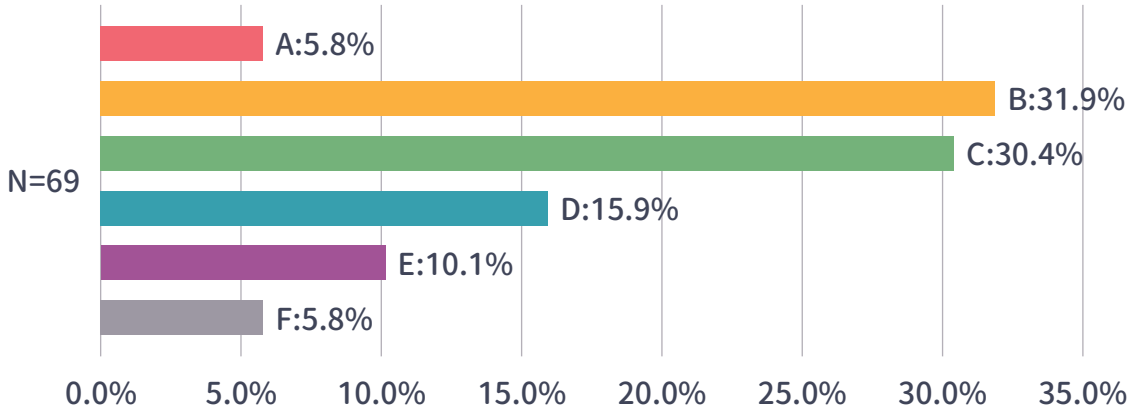
Item 57. 8-1 The wound dressing in regarding to implant-based and autologous flap reconstruction after nipple sparing mastectomy should be different

A Yes: 34 B No: 14 C Depends on location of incision: 11
D Unknown: 4 E Abstain: 6



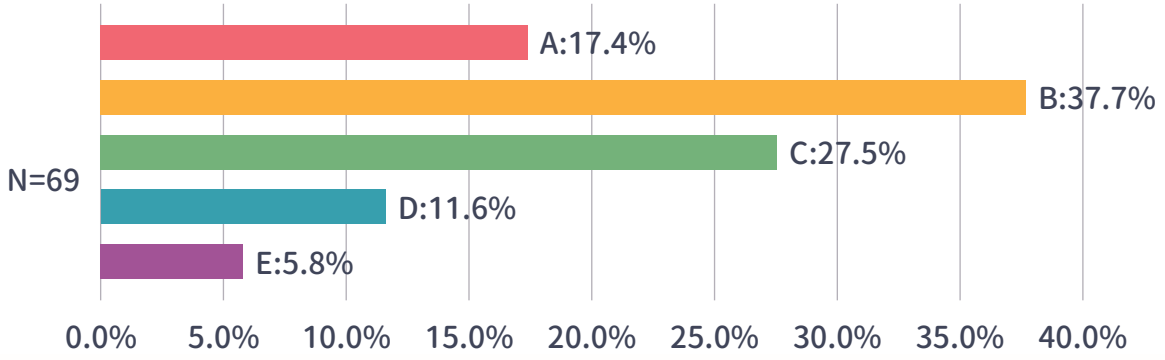
Item 59. 8-3 The timing of negative pressure vacuum ball drain removal after nipple sparing mastectomy with immediate reconstruction should be

A As early as possible within one week: 4
B Daily amount of drain less than 20c.c: 22
C Daily amount of drain less than 30c.c: 21
D Daily amount of drain less than 30c.c, maximal 2 week: 11
E Unknown: 7 F Abstain: 4

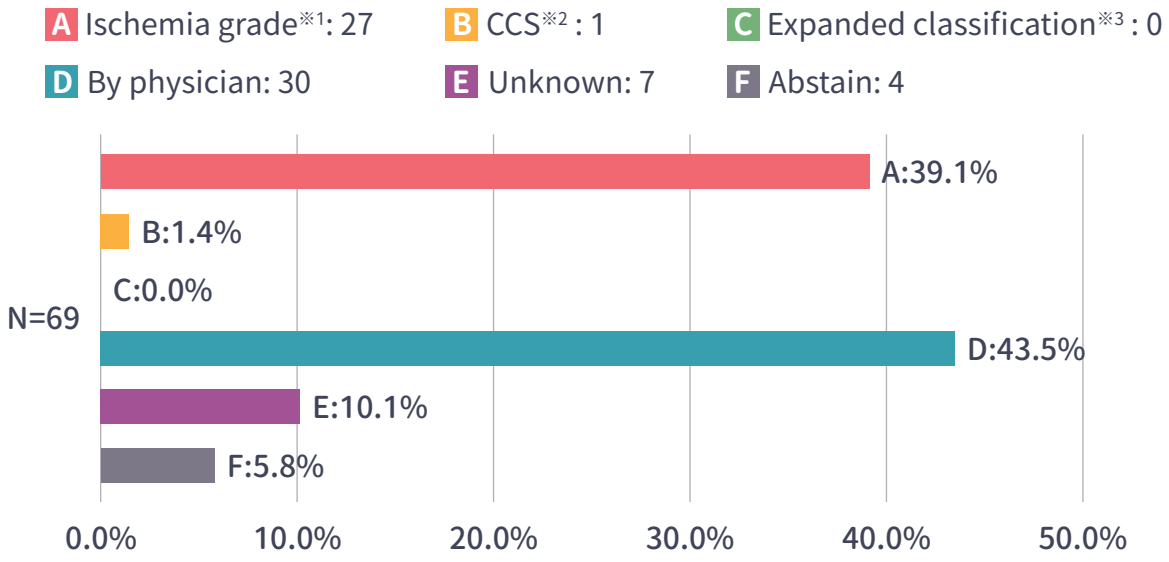


Item 60. 8-4 Timing of upper limb active exercise on same site of mastectomy with immediate reconstruction

A As soon as possible on 2nd day: 12 B As patient tolerable: 26
C After vacuum ball removal: 19 D Unknown: 8 E Abstain: 4



Item 61. 8-5 Your description about skin complication in medical records is



Remark:

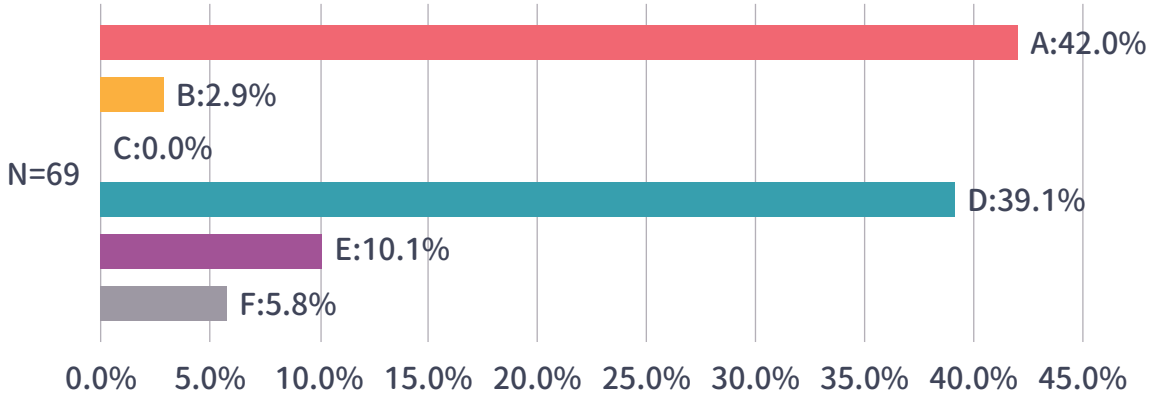
※ 1. Grade 0:No area of ischemic skin
Grade 1:small area of ischemic skin
Grade 2: ischemic need debridement
Grade 3:ischemia need surgical removal
Grade 4:ischemia need skin graft

※ 2. The Clavien Classification System (CCS)
Grade I:Any complication which would resolve spontaneously if left untreated without the need for pharmacological intervention. Hospital stay required for treatment of complication does not exceed twice the median length of stay for the procedure.
Grade II:Potentially life-threatening complication with the need for some form of intervention. Does not result in lasting or residual disability or organ resection.
Grade IIa:Complications requiring medications other than allowed for Grade I.
Grade IIb:Complications requiring invasive procedures or reoperation.
Grade III:Complications with residual or lasting disability or which require organ resection.
Grade IV:Death as a result of any complication.
Note - Medications in Grade I complications include: analgesic, antipyretic, antiemetic and antidiarrheal drugs.

※ 3. Expanded Classification
1. Mild complication: Minor invasive procedures done at the bedside. Physiotherapy and the following drugs are allowed: antiemetics, antipyretics, analgesics, diuretics, electrolytes, and physiotherapy.
2. Moderate complication: Treatment with drugs other than such allowed for minor complications, for instance, antibiotics. Blood transfusions and total parenteral nutrition are also included.
3. Severe: Management by an endoscopic, interventional procedure or re-operation without general anesthesia.
4. Severe: Management under general anesthesia.
5. Severe: Organ system failure.
6. Death: Postoperative death.

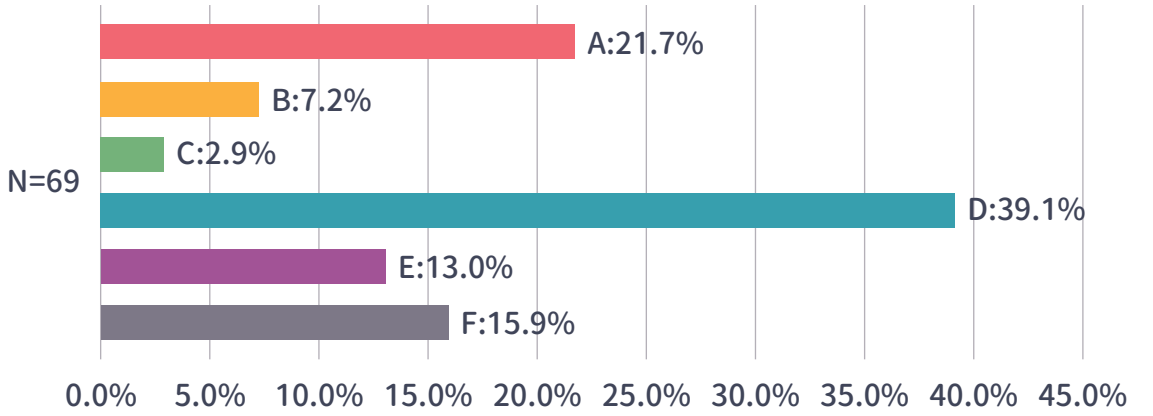
Item 62. 8-6 Your description about nipple-areolar complex complication in medical accord is

A Ischemia grade※1: 29　B CCS※2 : 2　C Expanded classification※3 : 0
D By physician: 27　E Unknown: 7　F Abstain: 4



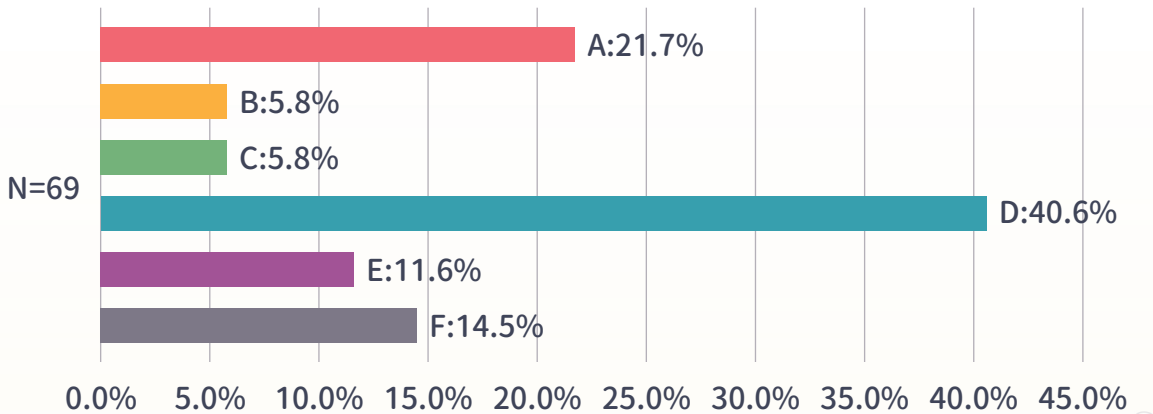
Item 63. 8-7 Your description about autologous reconstruction

A Ischemia grade※1: 15　B CCS※2 : 5　C Expanded classification※3 : 2
D By physician: 27　E Unknown: 9　F Abstain: 11



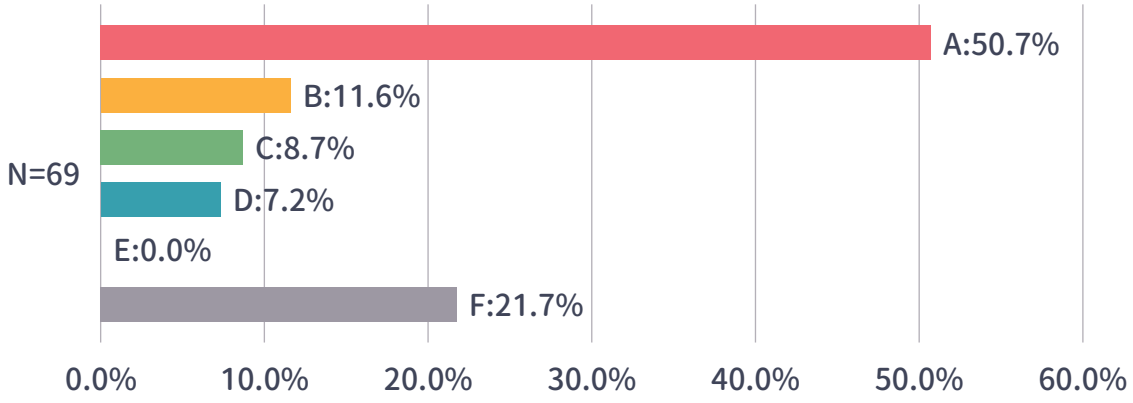
Item 64. 8-8 Your description about implant-based reconstruction

A Ischemia grade※1: 15　B CCS※2 : 4　C Expanded classification※3 : 4
D By physician: 28　E Unknown: 8　F Abstain: 10



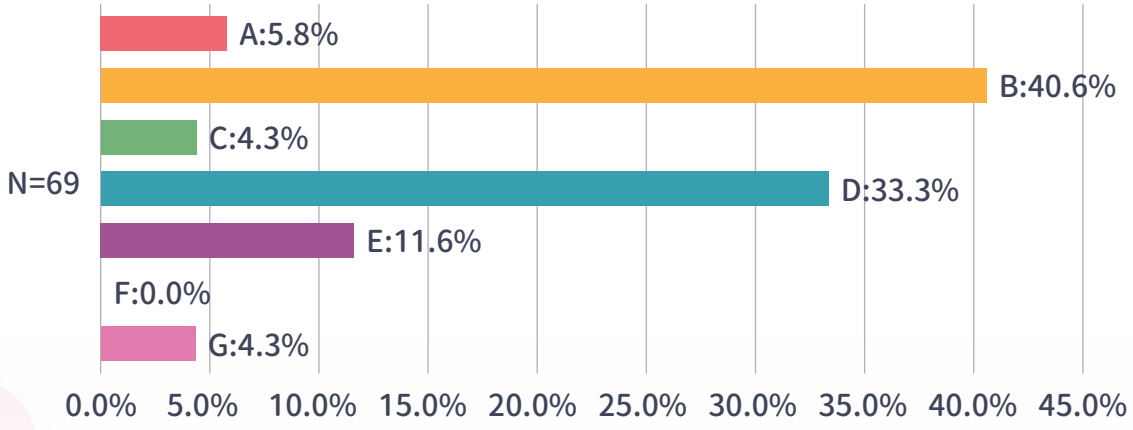
Item 66. 9-2 For a extremely obese, ptotic elderly lady breast cancer patient, your judgment of indication for nipple sparing mastectomy is

A The same: 35
B Always no nipple preservation: 8
C No immediate reconstruction: 6
D No implant-based reconstruction: 5
E Unknown: 0
F Abstain: 15

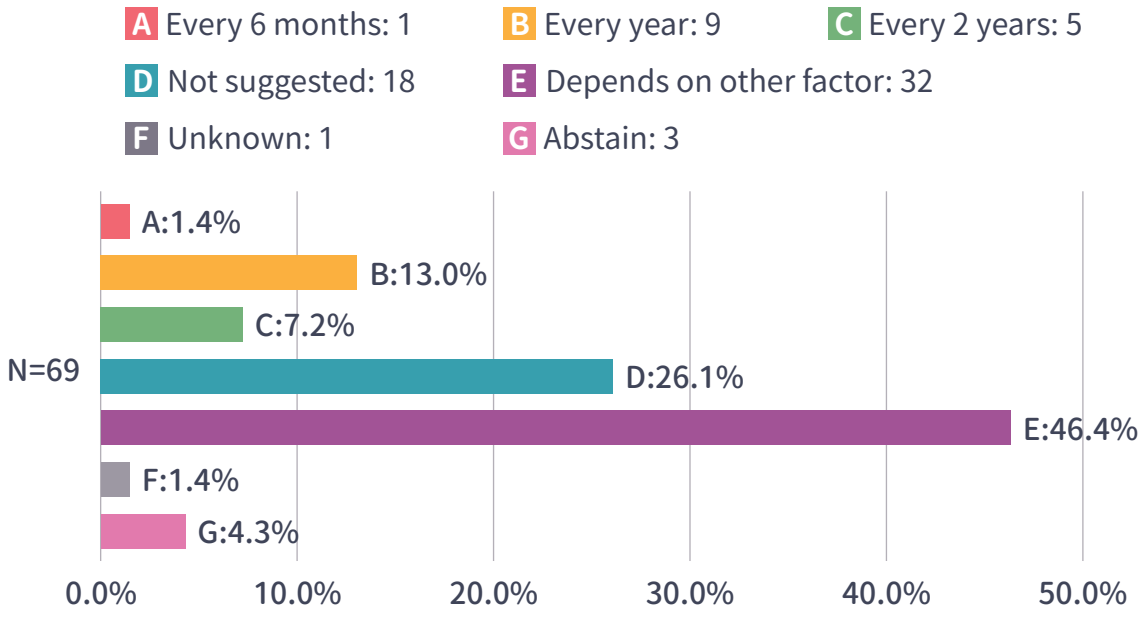


Item 69. 10-3 For the ipsilateral breast after nipple sparing mastectomy, the mammography done in

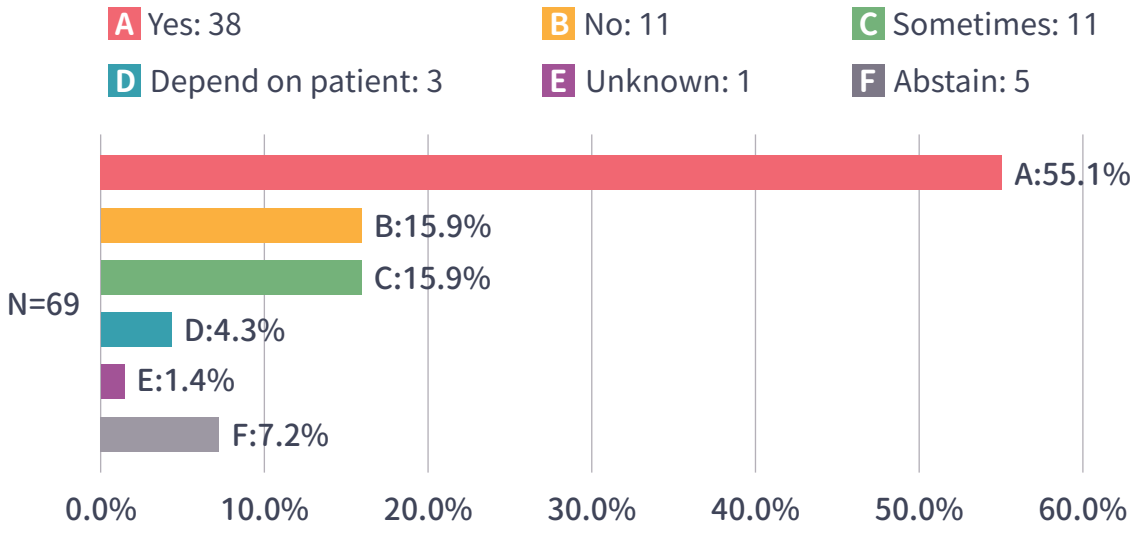
A Every 6 months: 4
B Every year: 28
C Every 2 years: 3
D Not suggested: 23
E Depends on other factor: 8
F Unknown: 0
G Abstain: 3



Item 71. 10-5 In clinical surveillance of ipsilateral site breast after nipple sparing mastectomy, breast MRI is suggested

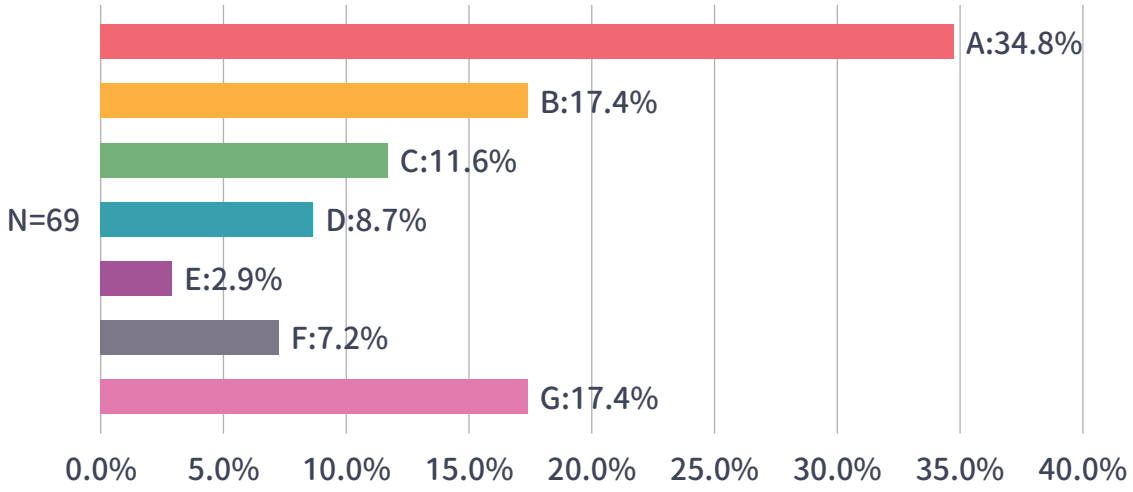


Item 72. 11-1 Do you take the pre-operative and post-operative photo as standard format for objective outcome assessment



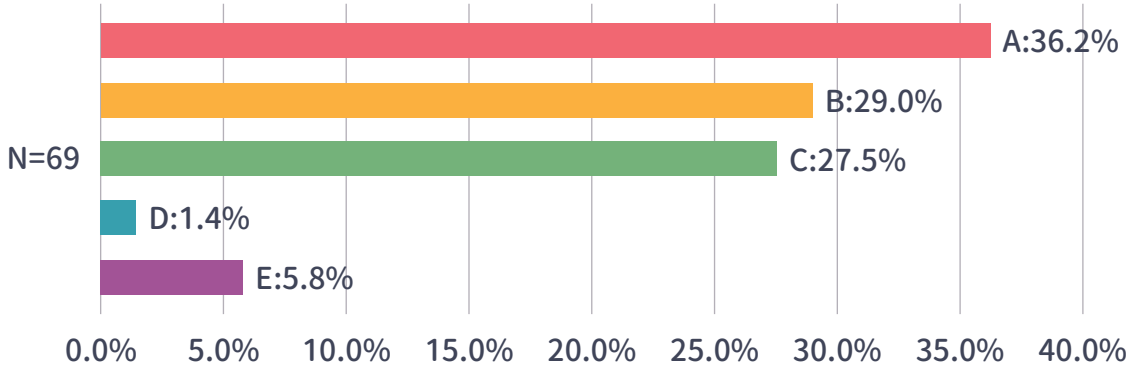
Item 73. 11-2 What tool to evaluate the aesthetic outcomes including volume, symmetry, shape and satisfaction for patients after nipple sparing mastectomy in your practice

A Doctor's vision: 24
B Patients report: 12
C Aesthetic Items Scale: 8
D 3-D image: 6
E Others: 2
F Unknown: 5
G Abstain: 12

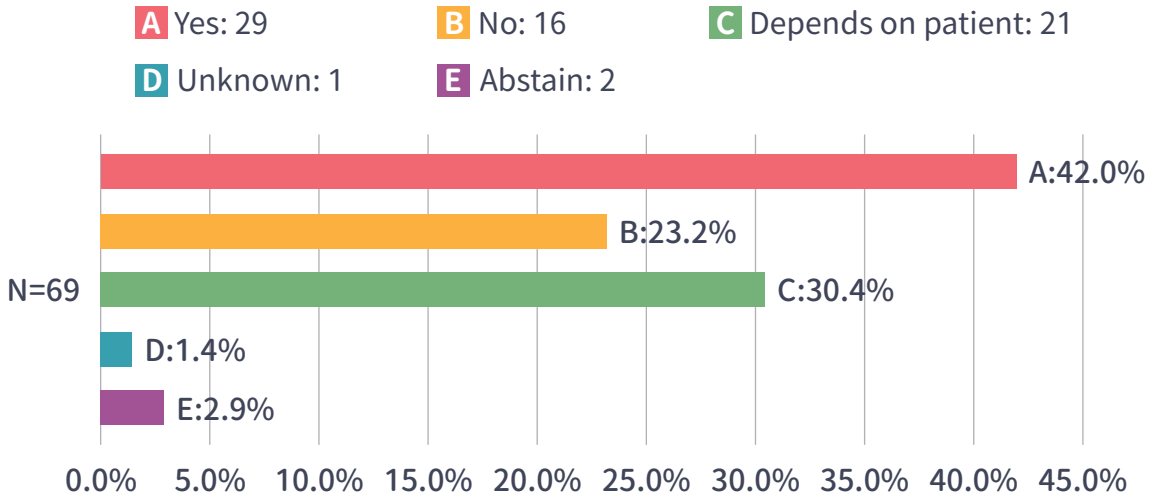


Item 74. 11-3 Do you evaluate the sensation of skin flap and the nipple areolar complex

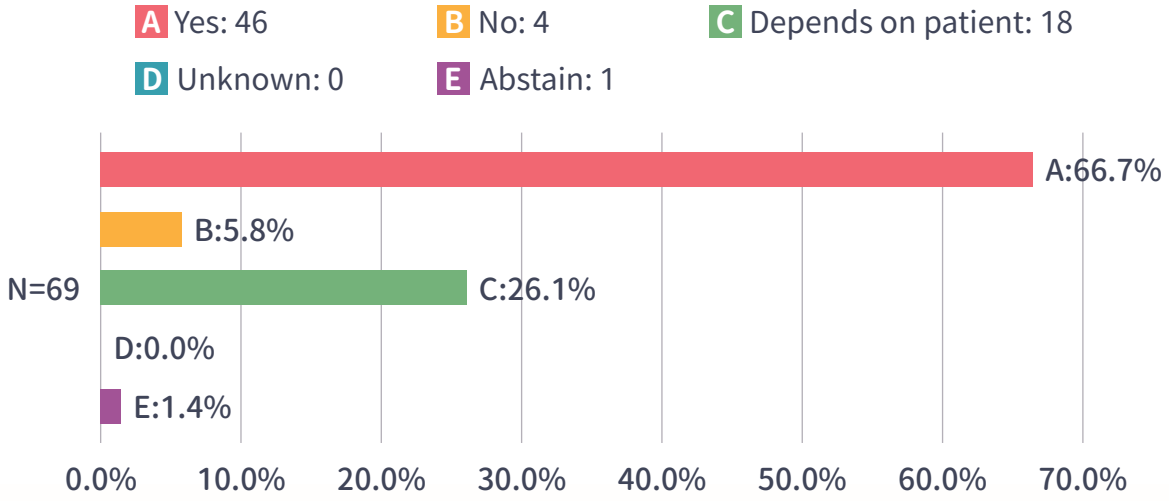
A Yes: 25
B No: 20
C Occasionally: 19
D Unknown: 1
E Abstain: 4



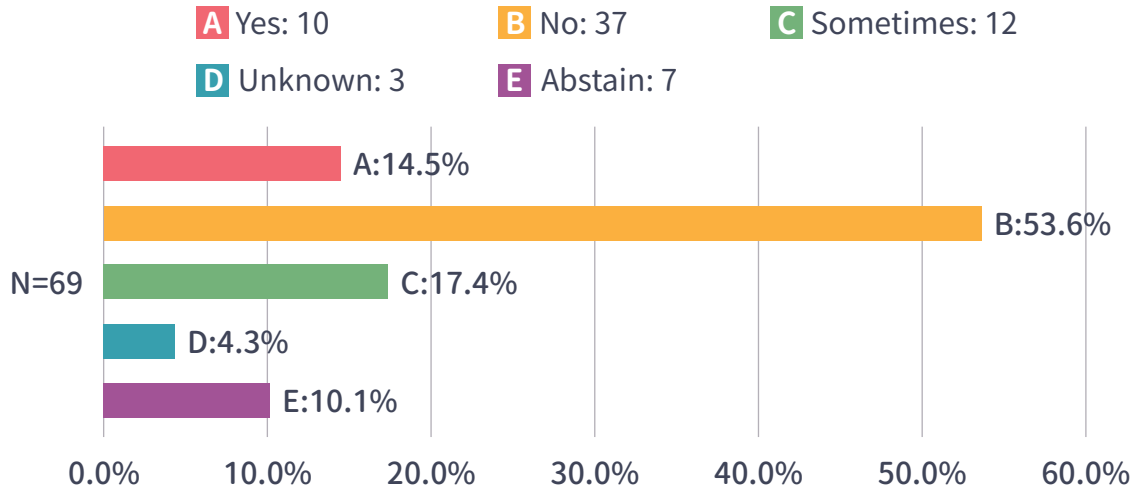
Item 76. 11-5 Do you consider the incision length of nipple sparing mastectomy is a critical issue in aesthetic outcome



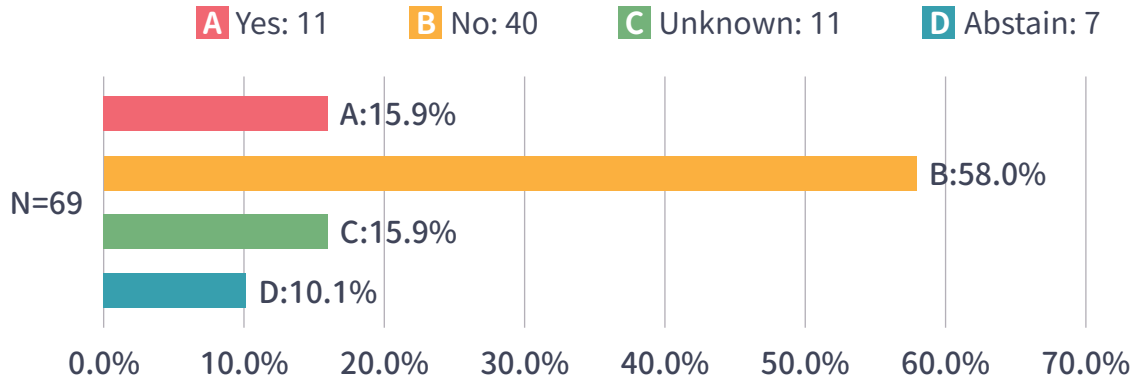
Item 77. 11-6 Do you consider the incision location of nipple sparing mastectomy is a critical issue in aesthetic outcome



Item 78. 12-1 Does your institute routinely finish the patient reported outcome questionnaire after nipple sparing mastectomy

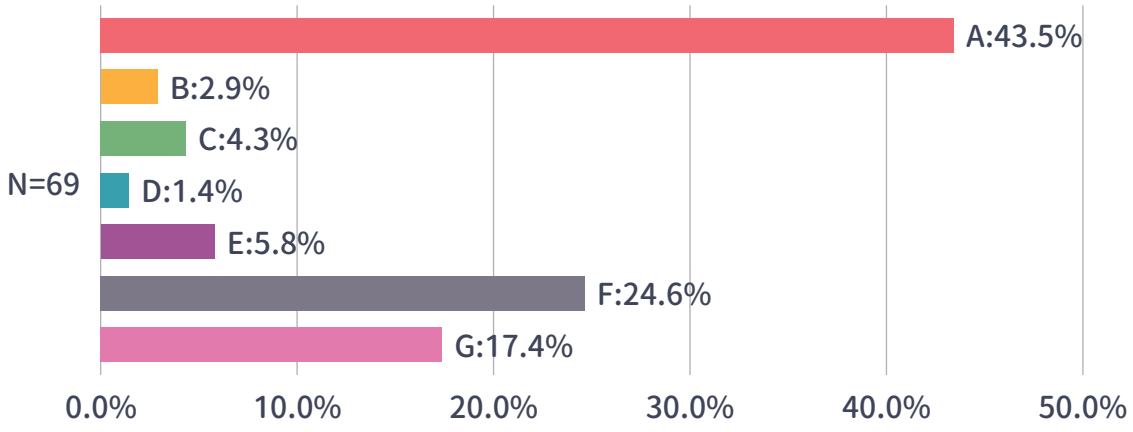


Item 79. 12-2 Does your institute provide standard form of patient reported outcome with IRB certificate



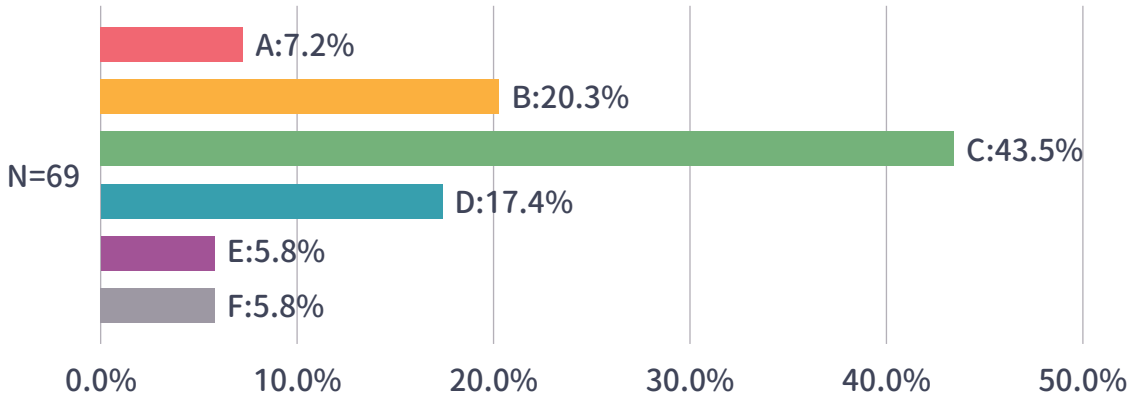
Item 80. 12-3 For quality of life, satisfaction evaluation, the most material provided with internationally validated tool is

A BREAST-Q: 30
B EORIC QLQ-BRECON23: 2
C EORIC QLQ-BR45: 3
D Homemade form: 1
E No specific one: 4
F Unknown: 17
G Abstain: 12



Item 81. 12-4 In general, do your patients complain the loss of nipple sensation always bother her

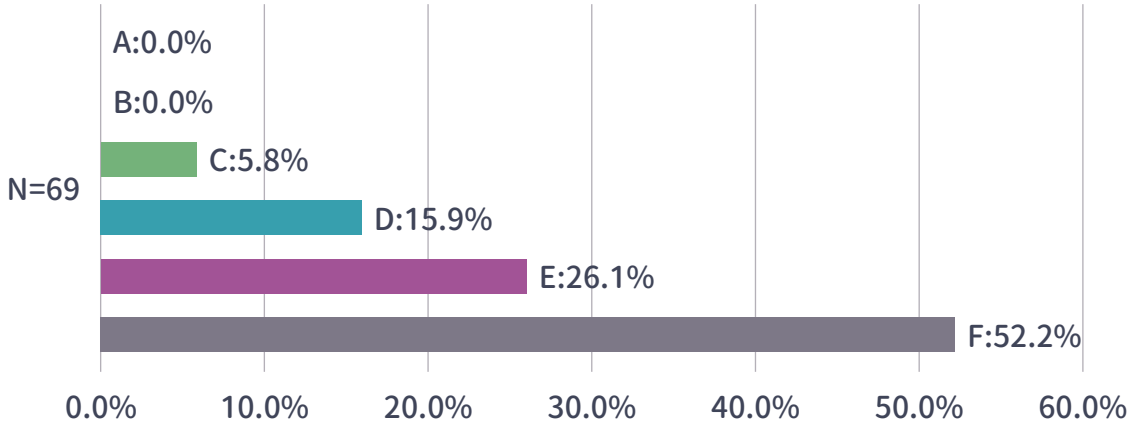
A Frequently: 5
B Sometimes: 14
C Occasionally: 30
D Not at all: 12
E Unknown: 4
F Abstain: 4



C. Personal experiences

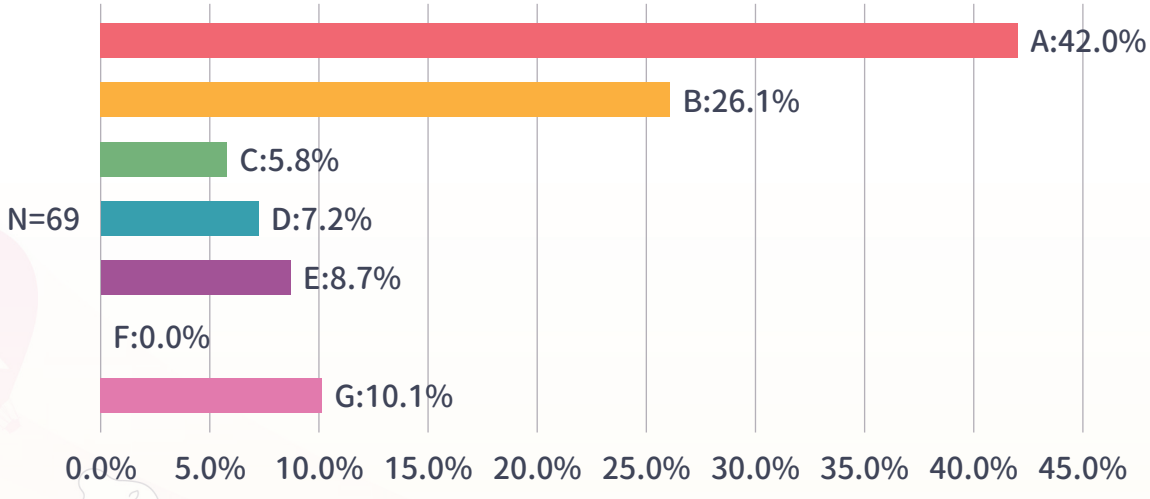
Item 11. 3-1 The percentage of breast conserving surgery in your practice is

A <20%: 0　B 21~30%: 0　C 31~40%: 4
D 41~50%: 11　E 51~60%: 18　F >60%: 36



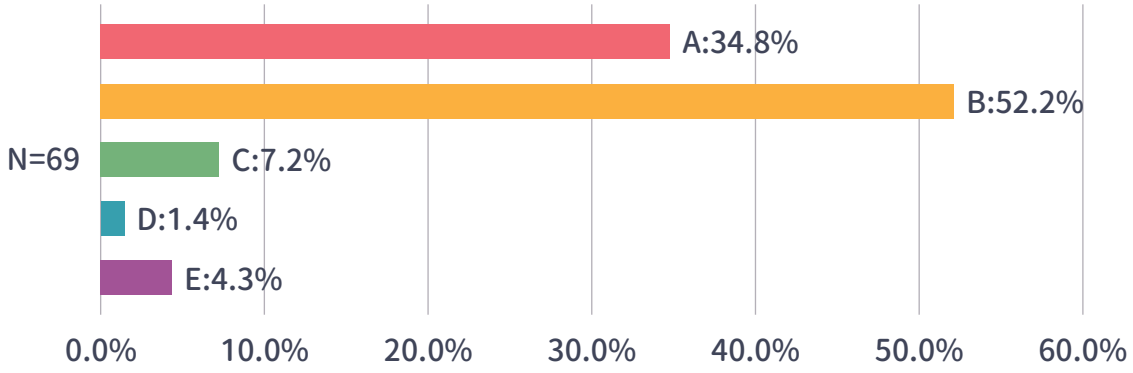
Item 18. 3-8 A slimmed, A-Cup sized breast cancer patient who prefer mastectomy, planned no post-mastectomy radiotherapy no contralateral augmentation mammoplasty, you will suggest the patient receive

A No reconstruction: 29
B Immediate implant-based reconstruction: 18
C Immediate free flap reconstruction: 4
D Immediate pedicle TRAM reconstruction: 5
E Two stage implant-based reconstruction: 6
F Unknown: 0　G Abstain: 7



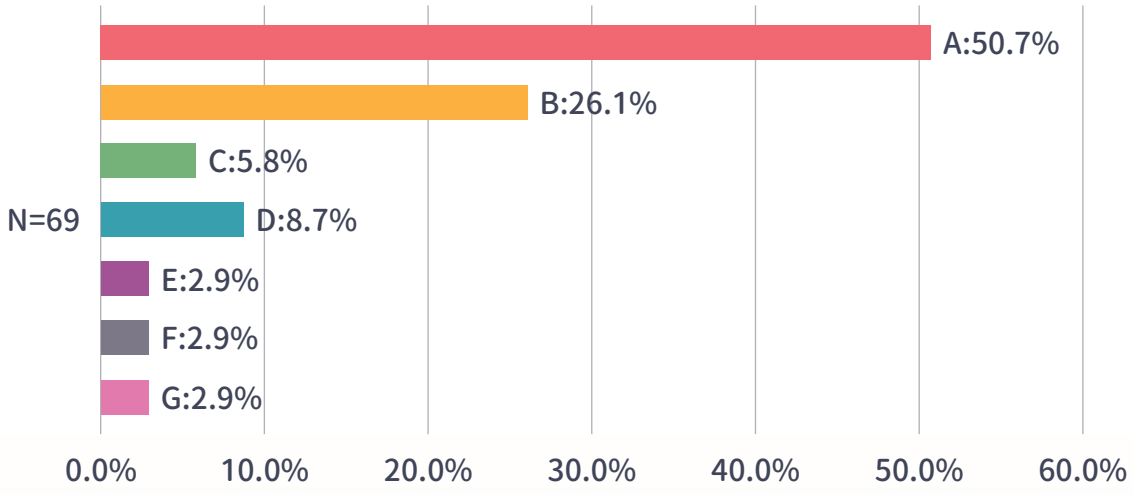
Item 20. 4-1 The length of skin incision in your practice is usually

A <5cm: 24 B 5~7cm: 36 C 8~10cm: 5
D >10cm: 1 E Abstain: 3



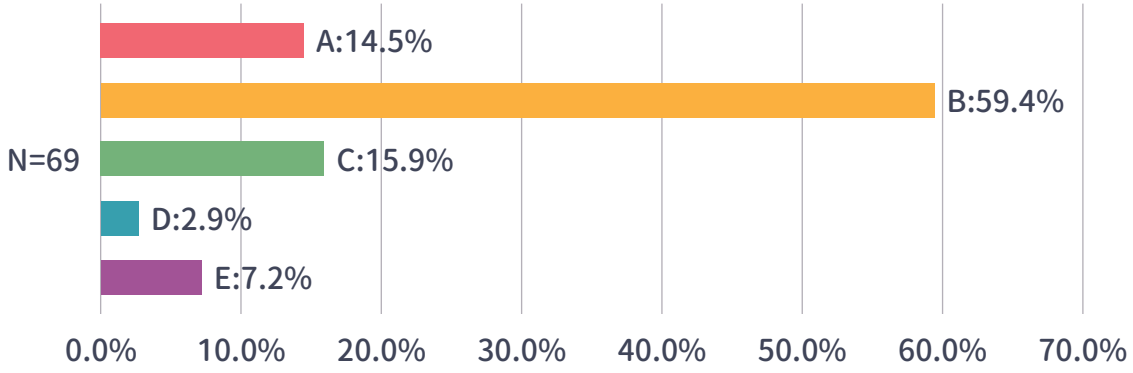
Item 21. 4-2 Your preference of skin flap development in nipple sparing mastectomy is

A Hydro dissection (tumescent): 35
B Sharp dissection by electrocautery: 18
C Sharp dissection by surgical scissors: 4
D Sharp dissection by energy device: 6
E Other: 2
F Unknown: 2
G Abstain: 2



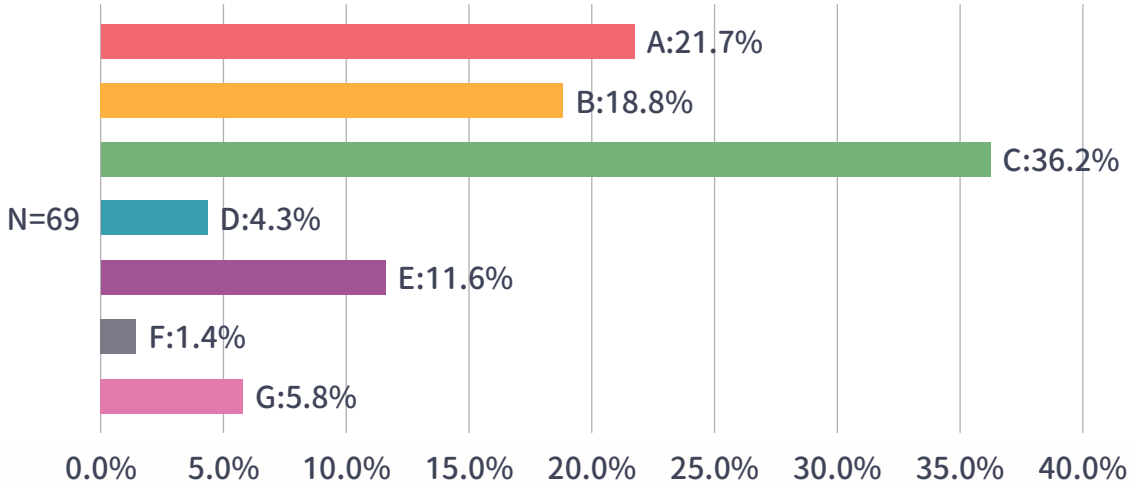
Item 22. 4-3 Anatomically, the dissection plan of skin flap development in nipple sparing mastectomy (exclude the condition of patients obese, age and co-morbidity) is on

A Subdermal plane: 10 B Subcutaneous plane: 41 C Subfascial plane: 11
D Unknown: 2 E Abstain: 5



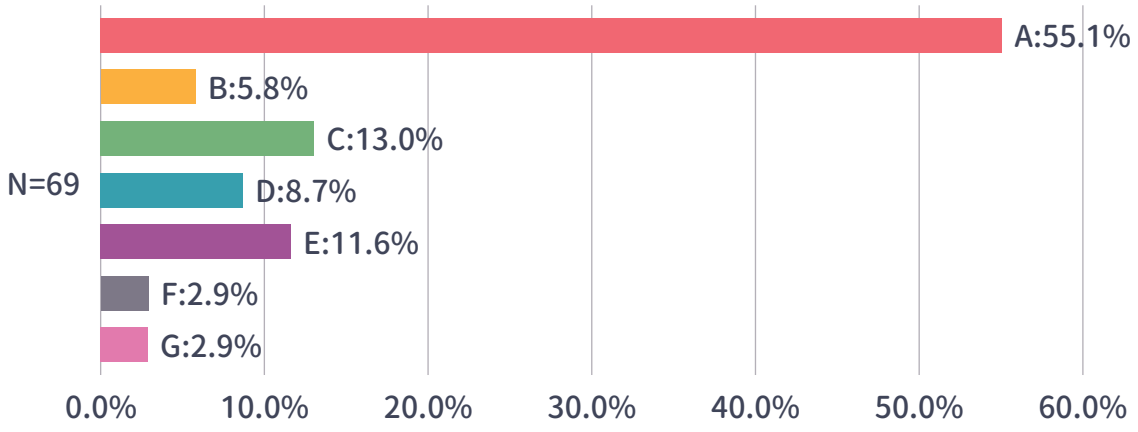
Item 25. 4-6 Your preferred approach method of nipple sparing mastectomy is

A Conventional: 15 B Conventional but mid-axillary line skin incision: 13
C Endoscope-2D or 3D: 25 D Robot-assisted: 3 E C or D: 8
F Unknown: 1 G Abstain: 4



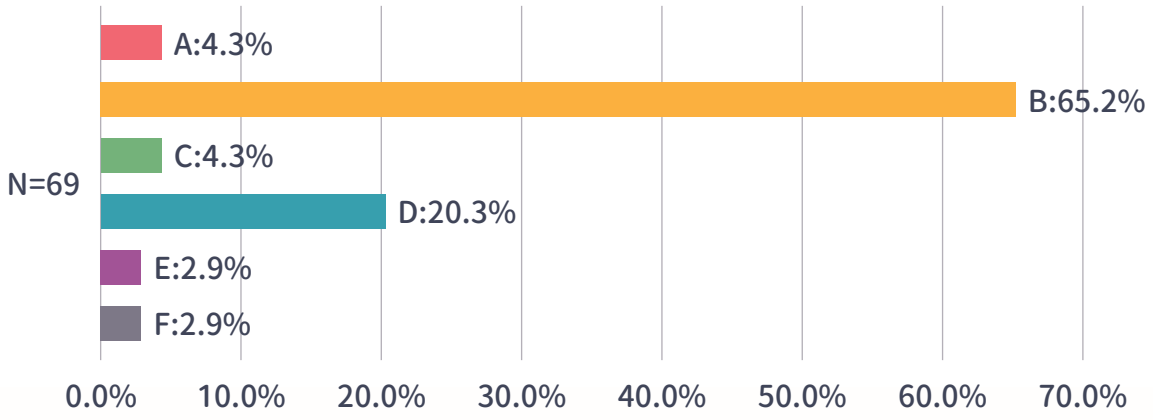
Item 29. 4-10 The most difficulty in surgical approach of nipple sparing mastectomy in your practice is (limited to selecting only one)

A Large breast (volume >400g): 38
B Funnel chest: 4
C Obese women: 9
D Large tumor size: 6
E No difficult at all: 8
F Unknown: 2
G Abstain: 2

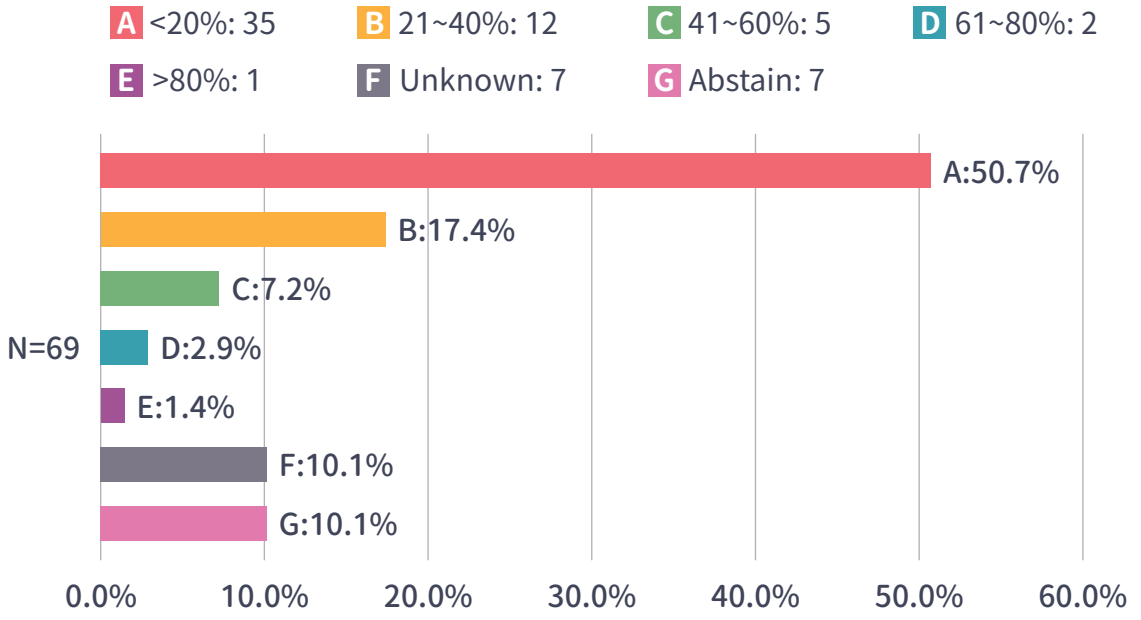


Item 30. 4-11 The most critical point for bleeder check in your practice is located at

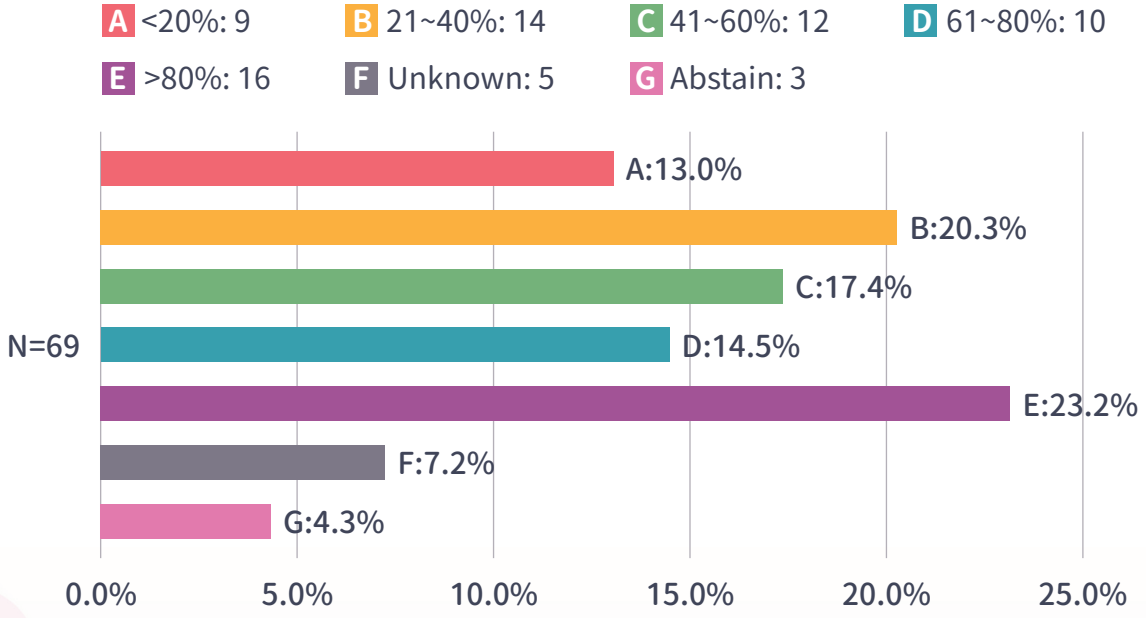
A Area of lateral thoracic artery: 3
B Area of medial thoracic artery, area of internal mammary artery: 45
C Upper chest wall of thoracic artery: 3
D Not at all: 14
E Unknown: 2
F Abstain: 2



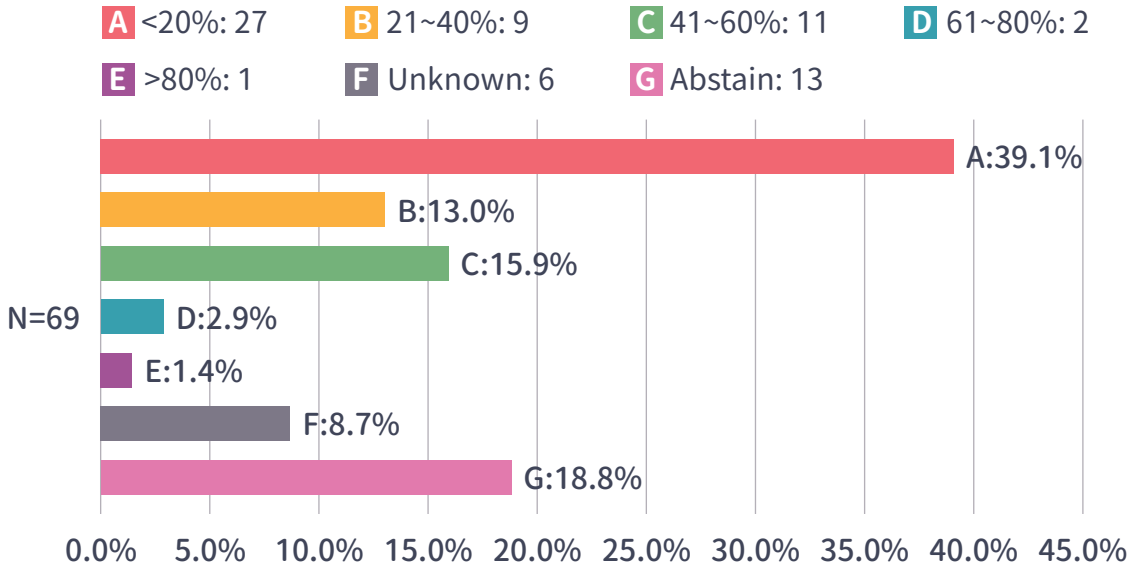
Item 34. 5-3 The percentage of tissue expander in immediate reconstruction in your team



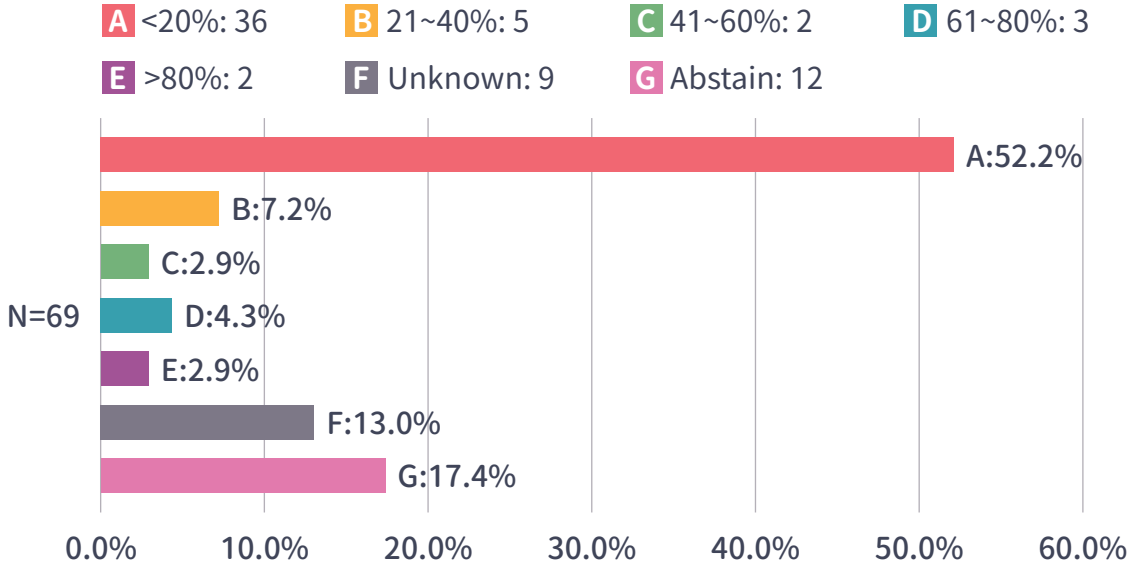
Item 35. 5-4 The percentage of implant in immediate reconstruction in your team



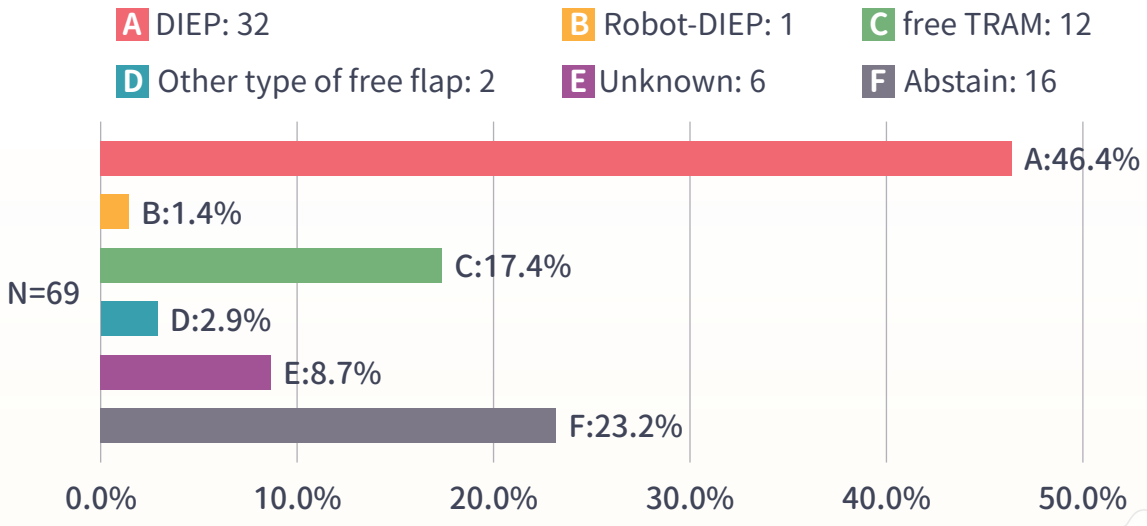
Item 36. 5-5 The percentage of free flap immediate reconstruction in your team



Item 37. 5-6 The percentage of pedicle TRAM flap ± supercharge in your team

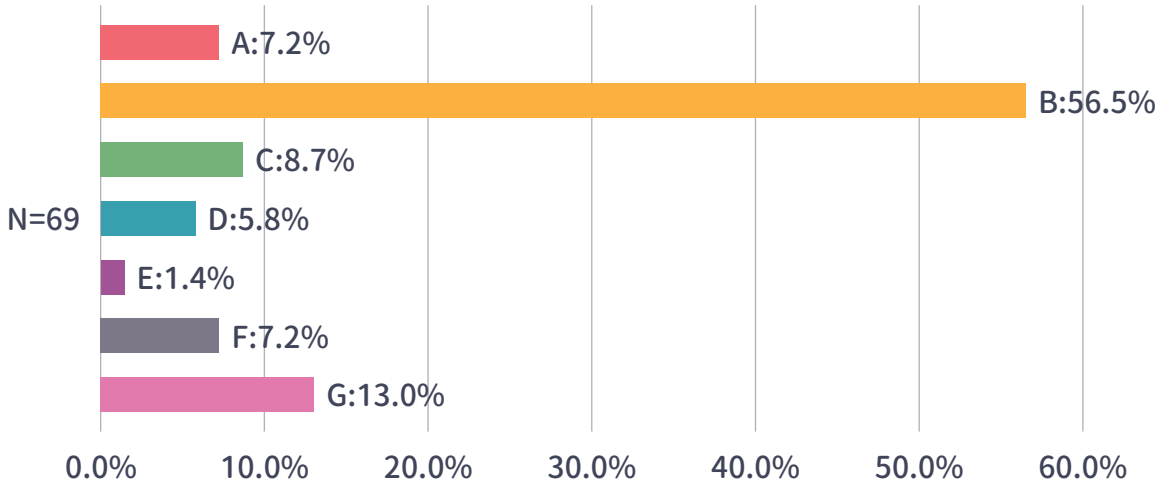


Item 38. 5-7 The methods of free flap in your team (most) is



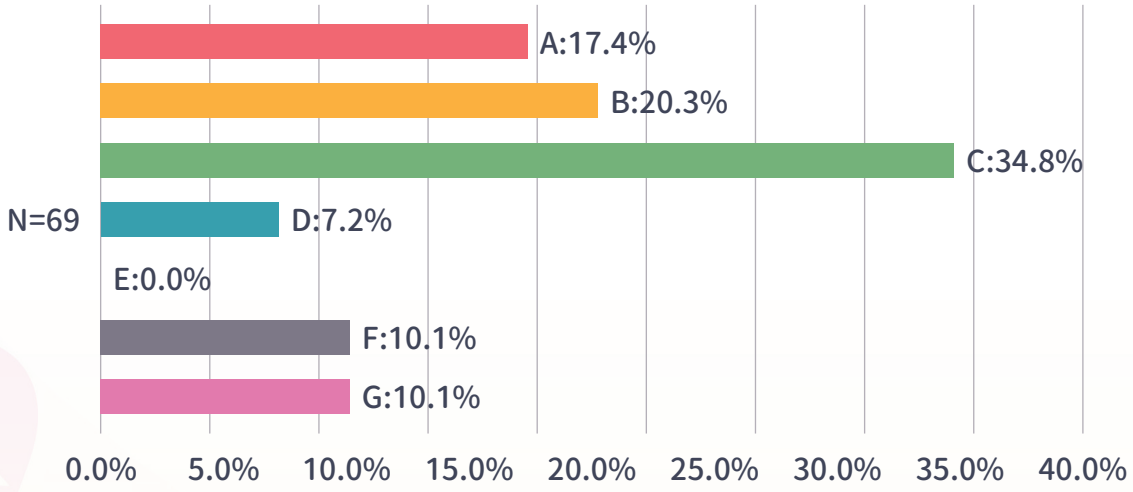
Item 39. 5-8 In a slimmed lady breast cancer patient plan to receive nipple sparing mastectomy and no radiotherapy plan, your choice of reconstruction is

A Pre-pectoral implant: 5
B Sub-pectoral implant: 39
C Autologous flap: 6
D Pedicle flap: 4
E Biological material: 1
F Unknown: 5
G Abstain: 9

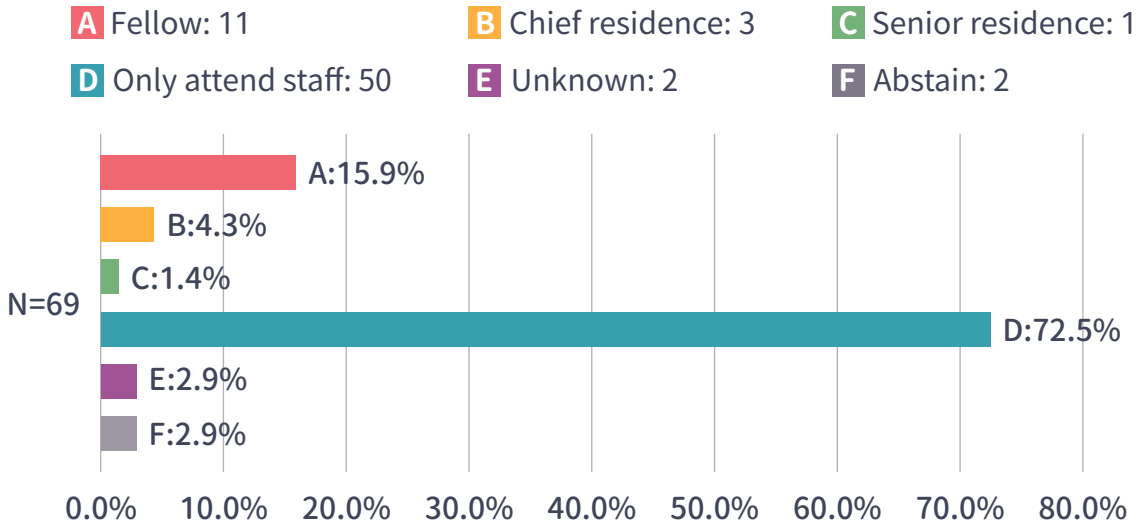


Item 40. 5-9 In an obese lady breast cancer patient with ptotic breast plan to receive nipple sparing mastectomy and no radiotherapy planned, your choice of reconstruction is

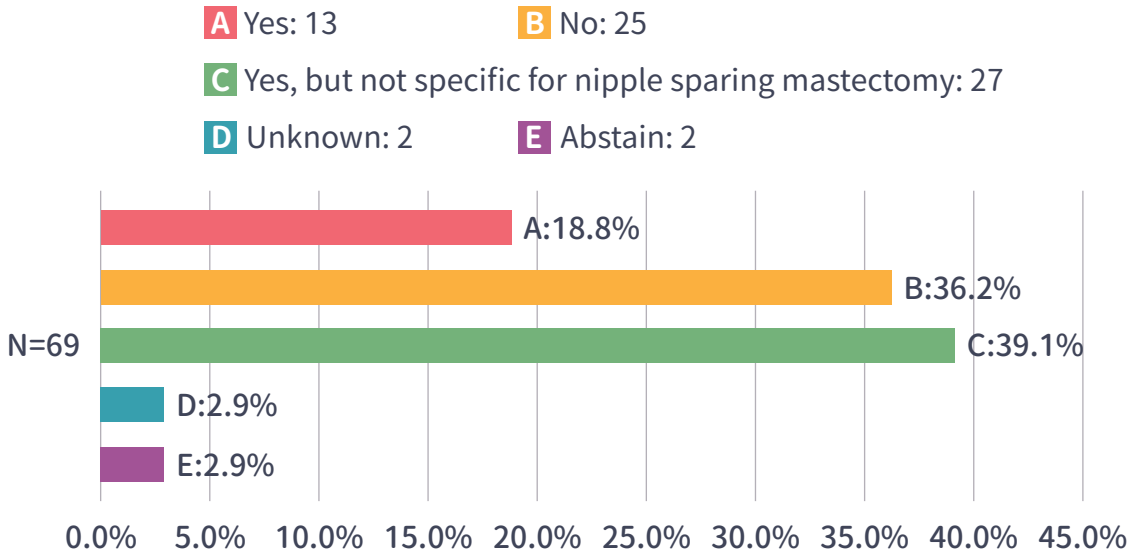
A Pre-pectoral implant: 12
B Sub-pectoral implant: 14
C Autologous flap: 24
D Pedicle flap: 5
E Biological material: 0
F Unknown: 7
G Abstain: 7



Item 82. 13-1 In your institute, the nipple sparing mastectomy can be performed independently by



Item 83. 13-2 Any training program of nipple sparing mastectomy in your institute



Cross Tabulation Analysis

Item 11. 3-1 The percentage of breast conserving surgery in your practice is

A <20%: 0 B 21~30%: 0 C 31~40%: 4 D 41~50%: 11
E 51~60%: 18 F >60%: 36

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0
C	3.8%	11.8%	7.7%	3.3%	8.7%	0	5.0%	8.8%	0
D	17.3%	11.8%	17.9%	13.3%	17.4%	13.0%	15.0%	14.7%	20.0%
E	23.1%	35.3%	30.8%	20.0%	21.7%	34.8%	40.0%	20.6%	20.0%
F	55.8%	41.1%	43.6%	63.4%	52.2%	52.2%	40.0%	55.9%	60.0%
P value	0.409		0.423		0.364		0.602		

Item 12. 3-2 For patients receive nipple sparing mastectomy, your attitude is

A Accept and recommend: 61 B Accept but not recommend: 8 C Not accept: 0
D Against: 0 E Unknown : 0 F Abstain : 0

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	90.4%	82.4%	92.3%	83.3%	87.0%	91.3%	80.0%	97.1%	80.0%
B	9.6%	17.6%	7.7%	16.7%	13.0%	8.7%	20.0%	2.9%	20.0%
C	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0
P value	0.397		0.281		0.710		0.086		

Item 13. 3-3 In minimal access to nipple sparing mastectomy, your attitude is

A Agree: 21 B Agree, but in condition such as tumor location and size: 46

C Against: 0 D Unknown: 2 E Abstain: 0

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	30.8%	29.4%	30.8%	30.0%	32.6%	26.1%	20.0%	38.2%	26.7%
B	67.3%	64.7%	64.1%	70.0%	65.2%	69.6%	70.0%	61.8%	73.3%
C	0	0	0	0	0	0	0	0	0
D	1.9%	5.9%	5.1%	0	2.2%	4.3%	10.0%	0	0
E	0	0	0	0	0	0	0	0	0
P value	0.700		0.443		0.776		0.157		

Item 14. 3-4 Your preference of skin incision in minimal access nipple sparing mastectomy

A Depends on tumor location: 34 B Peri-areolar: 6 C Axillary line: 22

D Inframammary fold: 3 E Other: 1 F Abstain: 3

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	48.2%	52.9%	40.9%	60.0%	45.6%	56.5%	60.0%	38.2%	60.1%
B	9.6%	5.9%	7.7%	10.0%	8.7%	8.7%	15.0%	2.9%	13.3%
C	32.7%	29.4%	38.5%	23.3%	34.8%	26.1%	20.0%	47.1%	13.3%
D	3.8%	5.9%	2.6%	6.7%	2.2%	8.7%	0	2.9%	13.3%
E	1.9%	0	2.6%	0	2.2%	0	0	2.9%	0
F	3.8%	5.9%	7.7%	0	6.5%	0	5.0%	5.9%	0
P value	0.972		0.279		0.517		0.136		

Item 17. 3-7 To make sure either nipple was involved or not, your decision to preserve nipple will depends on the findings of

A MRI: 6 B Mammography: 0 C Ultrasound: 1

D Mammography and ultrasound: 13 E Contrast mammography: 0

F All image findings: 46 G Abstain: 3

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	11.5%	0	7.7%	10.0%	10.9%	4.3%	10.0%	8.8%	6.7%
B	0	0	0	0	0	0	0	0	0
C	1.9%	0	2.6%	0	2.2%	0	5.0%	0	0
D	21.2%	11.8%	20.5%	16.7%	23.9%	8.7%	5.0%	26.5%	20.0%
E	0	0	0	0	0	0	0	0	0
F	59.6%	88.2%	66.7%	66.7%	58.7%	82.7%	80.0%	55.9%	73.3%
G	5.8%	0	2.6%	6.6%	4.3%	4.3%	0	8.8%	0
P value	0.245		0.797		0.349		0.267		

Item 18. 3-8 A slimmed, A-Cup sized breast cancer patient who prefer mastectomy, planned no post-mastectomy radiotherapy no contralateral augmentation mammoplasty, you will suggest the patient receive

A No reconstruction: 29 B Immediate implant-based reconstruction: 18

C Immediate free flap reconstruction: 4 D Immediate pedicle TRAM reconstruction: 5

E Two stage implant-based reconstruction: 6 F Unknown: 0 G Abstain: 7

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	41.4%	43.6%	60.0%	32.4%	40.0%
B	23.9%	30.4%	10.0%	41.1%	13.3%
C	4.3%	8.7%	5.0%	5.9%	6.7%
D	6.5%	8.7%	15.0%	5.9%	0
E	10.9%	4.3%	10.0%	0	26.7%
F	0	0	0	0	0
G	13.0%	4.3%	0	14.7%	13.3%
P value	0.737		**0.013**		

Item 21. 4-2 Your preference of skin flap development in nipple sparing mastectomy is

A Hydro dissection (tumescent): 35
B Sharp dissection by electrocautery: 18
C Sharp dissection by surgical scissors: 4
D Sharp dissection by energy device: 6
E Other: 2
F Unknown: 2
G Abstain: 2

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	46.2%	64.6%	56.3%	43.4%	52.2%	47.9%	60.0%	47.1%	46.7%
B	32.7%	5.9%	23.1%	30.1%	19.6%	39.1%	15.0%	23.5%	46.7%
C	5.8%	5.9%	7.7%	3.3%	8.7%	0	5.0%	8.8%	0
D	9.6%	5.9%	5.1%	13.3%	8.7%	8.7%	10.0%	8.8%	6.6%
E	3.8%	0	2.6%	3.3%	4.3%	0	0	5.9%	0
F	0	11.8%	2.6%	3.3%	4.3%	0	10.0%	0	0
G	1.9%	5.9%	2.6%	3.3%	2.2%	4.3%	0	5.9%	0
P value	0.060		0.827		0.364		0.270		

Item 22. 4-3 Anatomically, the dissection plan of skin flap development in nipple sparing mastectomy (exclude the condition of patients obese, age and co-morbidity) is on

A Subdermal plane: 10
B Subcutaneous plane: 41
C Subfascial plane: 11
D Unknown: 2
E Abstain: 5

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	13.5%	17.6%	12.8%	16.7%	13.0%	17.4%	10.0%	17.6%	13.3%
B	67.3%	35.3%	56.4%	63.3%	56.6%	65.3%	50.0%	64.8%	60.1%
C	11.5%	29.4%	23.1%	6.7%	17.4%	13.0%	30.0%	8.8%	13.3%
D	0	11.8%	2.6%	3.3%	4.3%	0	10.0%	0	0
E	7.7%	5.9%	5.1%	10.0%	8.7%	4.3%	0	8.8%	13.3%
P value	**0.025**		0.439		0.740		0.158		

Item 23. 4-4 The thickness of skin flap of nipple sparing mastectomy in your practice is usually

A <3mm: 5 B 3~5mm: 45 C 6~10mm: 11
D >10mm: 1 E Unknown: 4 F Abstain: 3

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	3.8%	17.6%	7.7%	6.7%	6.5%	8.7%	10.0%	2.9%	13.3%
B	65.5%	64.7%	71.8%	56.7%	65.3%	65.3%	70.0%	61.9%	66.7%
C	21.2%	0	10.3%	23.3%	13.0%	21.7%	10.0%	17.6%	20.0%
D	1.9%	0	0	3.3%	2.2%	0	0	2.9%	0
E	3.8%	11.8%	5.1%	6.7%	8.7%	0	10.0%	5.9%	0
F	3.8%	5.9%	5.1%	3.3%	4.3%	4.3%	0	8.8%	0
P value	0.117		0.559		0.650		0.605		

Item 24. 4-5 The thickness of areolar complex area in nipple sparing mastectomy is about usually

A <3mm: 10 B 3~5mm: 32 C 6~10mm: 15
D >10mm: 6 E Unknown: 4 F Abstain: 2

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	13.5%	17.6%	20.5%	6.7%	17.4%	8.7%	5.0%	20.6%	13.4%
B	42.4%	58.8%	48.8%	43.3%	45.7%	47.9%	65.0%	32.3%	53.3%
C	26.9%	5.9%	17.9%	26.7%	17.4%	30.4%	15.0%	20.6%	33.3%
D	11.5%	0	5.1%	13.3%	8.7%	8.7%	5.0%	14.7%	0
E	3.8%	11.8%	5.1%	6.7%	8.7%	0	10.0%	5.9%	0
F	1.9%	5.9%	2.6%	3.3%	2.1%	4.3%	0	5.9%	0
P value	0.182		0.499		0.512		0.215		

Item 25. 4-6 Your preferred approach method of nipple sparing mastectomy is

A Conventional: 15
B Conventional but mid-axillary line skin incision: 13
C Endoscope-2D or 3D: 25
D Robot-assisted: 3
E C or D: 8
F Unknown: 1
G Abstain: 4

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	25.0%	11.8%	23.1%	20.0%	19.6%	26.1%	20.0%	20.6%	26.7%
B	23.1%	5.9%	7.7%	33.3%	19.6%	17.4%	5.0%	20.6%	33.3%
C	40.4%	23.5%	43.6%	26.7%	37.0%	34.8%	45.0%	41.2%	13.3%
D	1.9%	11.8%	5.1%	3.3%	6.5%	0	0	5.9%	6.7%
E	7.7%	23.5%	12.8%	10.0%	10.9%	13.0%	15.0%	8.8%	13.3%
F	0	5.9%	2.6%	0	2.1%	0	5.0%	0	0
G	1.9%	17.6%	5.1%	6.7%	4.3%	8.7%	10.0%	2.9%	6.7%
P value	**0.006**		0.209		0.819		0.411		

Item 26. 4-7 In your opinion, which approach method of nipple sparing mastectomy is the best modality to complete removal all the breast glandular tissue

A All the same: 27
B Conventional: 12
C Endoscopic: 16
D Robot assisted: 6
E Unknown: 6
F Abstain: 2

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	38.5%	41.2%	35.8%	43.3%	34.8%	47.9%	40.0%	35.4%	46.6%
B	21.2%	5.9%	10.3%	26.7%	23.9%	4.3%	5.0%	14.7%	40.0%
C	28.8%	5.9%	28.2%	16.6%	23.9%	21.8%	25.0%	29.4%	6.7%
D	3.8%	23.5%	15.4%	0	10.9%	4.3%	15.0%	8.8%	0
E	5.8%	17.6%	10.3%	6.7%	4.3%	17.4%	15.0%	8.8%	0
F	1.9%	5.9%	0	6.7%	2.2%	4.3%	0	2.9%	6.7%
P value	**0.022**		**0.046**		0.152		0.140		

Item 27. 4-8 To obtain margin free, you will do frozen section

A Not at all: 4 B Nipple core only: 43 C Tumor margin and nipple core: 18
D Unknown: 0 E Abstain: 4

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	7.7%	0	2.5%	10.0%	4.3%	8.7%	5.0%	0	20.0%
B	65.4%	53.0%	74.4%	46.7%	65.3%	56.6%	60.0%	73.5%	40.0%
C	25.0%	29.4%	15.4%	40.0%	23.9%	30.4%	35.0%	14.7%	40.0%
D	0	0	0	0	0	0	0	0	0
E	1.9%	17.6%	7.7%	3.3%	6.5%	4.3%	0	11.8%	0
P value	0.066		**0.042**		0.786		**0.011**		

Item 28. 4-9 Your next step, if positive nipple margin on frozen section intraoperatively

A More dissection to remove the residual tissue inside the nipple except the skin: 17
B Excision nipple-areolar complex: 41 C Excision nipple only: 7
D No further action, plan further adjuvant radiotherapy: 0 E Unknown: 1
F Abstain: 3

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	23.1%	29.4%	25.6%	23.3%	23.9%	26.1%	25.0%	26.5%	20.0%
B	63.5%	47.0%	61.5%	56.7%	56.6%	65.3%	65.0%	58.8%	53.3%
C	9.6%	11.8%	10.3%	10.0%	13.0%	4.3%	5.0%	8.8%	20.0%
D	0	0	0	0	0	0	0	0	0
E	0	5.9%	0	3.3%	2.2%	0	5.0%	0	0
F	3.8%	5.9%	2.5%	6.7%	4.3%	4.3%	0	5.9%	6.7%
P value	0.402		0.724		0.760		0.638		

Item 29. 4-10 The most difficulty in surgical approach of nipple sparing mastectomy in your practice is (limited to selecting only one)

A Large breast (volume >400g): 38
B Funnel chest: 4
C Obese women: 9
D Large tumor size: 6
E No difficult at all: 8
F Unknown: 2
G Abstain: 2

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	57.7%	47.0%	61.4%	46.8%	50.1%	65.3%	60.0%	61.8%	33.3%
B	3.8%	11.8%	7.7%	3.3%	6.5%	4.3%	10.0%	2.9%	6.7%
C	13.5%	11.8%	10.3%	16.7%	13.0%	13.0%	10.0%	8.8%	26.7%
D	11.5%	0	5.1%	13.3%	4.3%	17.4%	10.0%	5.9%	13.3%
E	13.5%	5.8%	10.3%	13.3%	17.5%	0	0	14.7%	20.0%
F	0	11.8%	2.6%	3.3%	4.3%	0	10.0%	0	0
G	0	11.8%	2.6%	3.3%	4.3%	0	0	5.9%	0
P value	0.011		0.771		0.135		0.161		

Item 33. 5-2 Who perform the reconstruction in your team

A Plastic surgeon: 53
B Another breast surgeon: 1
C All by myself: 12
D Abstain: 3

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	77.0%	76.5%	77.0%	76.7%	80.4%	69.6%	75.0%	85.3%	59.9%
B	1.9%	0	0	3.3%	0	4.3%	0	0	6.7%
C	17.3%	17.6%	17.9%	16.7%	17.4%	17.4%	20.0%	11.8%	26.7%
D	3.8%	5.9%	5.1%	3.3%	2.2%	8.7%	5.0%	2.9%	6.7%
P value	0.930		0.696		0.291		0.393		

Item 34. 5-3 The percentage of tissue expander in immediate reconstruction in your team

A <20%: 35 B 21~40%: 12 C 41~60%: 5 D 61~80%: 2
E >80%: 1 F Unknown: 7 G Abstain: 7

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	54.4%	43.6%	30.0%	58.9%	60.0%
B	17.4%	17.4%	20.0%	17.6%	13.3%
C	8.7%	4.3%	10.0%	5.9%	6.7%
D	4.3%	0	5.0%	2.9%	0
E	0	4.3%	0	0	6.7%
F	6.5%	17.4%	30.0%	2.9%	0
G	8.7%	13.0%	5.0%	11.8%	13.3%
P value	0.443		0.087		

Item 35. 5-4 The percentage of implant in immediate reconstruction in your team

A <20%: 9 B 21~40%: 14 C 41~60%: 12 D 61~80%: 10
E >80%: 16 F Unknown: 5 G Abstain: 3

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	4.3%	30.5%	10.0%	14.7%	13.2%
B	26.2%	8.7%	25.0%	17.6%	20.0%
C	17.4%	17.4%	20.0%	20.0%	6.7%
D	17.4%	8.7%	10.0%	11.8%	26.7%
E	23.9%	21.7%	10.0%	29.4%	26.7%
F	6.5%	8.7%	25.0%	0	0
G	4.3%	4.3%	0	5.9%	6.7%
P value	0.082		0.078		

Item 36. 5-5 The percentage of free flap immediate reconstruction in your team

A <20%: 27 B 21~40%: 9 C 41~60%: 11 D 61~80%: 2
E >80%: 1 F Unknown: 6 G Abstain: 13

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	43.5%	30.5%	15.0%	56.0%	33.3%
B	15.2%	8.7%	25.0%	2.9%	20.1%
C	15.2%	17.4%	25.0%	11.8%	13.3%
D	2.2%	4.3%	5.0%	2.9%	0
E	2.2%	0	0	2.9%	0
F	6.5%	13.0%	25.0%	2.9%	0
G	15.2%	26.1%	5.0%	20.6%	33.3%
P value	0.721		0.009		

Item 37. 5-6 The percentage of pedicle TRAM flap ± supercharge in your team

A <20%: 36 B 21~40%: 5 C 41~60%: 2 D 61~80%: 3
E >80%: 2 F Unknown: 9 G Abstain: 12

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	54.4%	47.9%	45.0%	61.8%	39.9%
B	6.5%	8.7%	10.0%	5.9%	6.7%
C	2.2%	4.3%	0	2.9%	6.7%
D	4.3%	4.3%	0	5.9%	6.7%
E	4.3%	0	0	5.9%	0
F	10.9%	17.4%	35.0%	2.9%	6.7%
G	17.4%	17.4%	10.0%	14.7%	33.3%
P value	0.922		0.075		

Item 38. 5-7 The methods of free flap in your team (most) is

A DIEP: 32
B Robot-DIEP: 1
C free TRAM: 12
D Other type of free flap: 2
E Unknown: 6
F Abstain: 16

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	52.2%	34.8%	60.0%	44.1%	33.3%
B	2.2%	0	0	2.9%	0
C	15.2%	21.7%	5.0%	20.6%	26.7%
D	0	8.7%	0	0	13.3%
E	8.7%	8.7%	30.0%	0	0
F	21.7%	26.1%	5.0%	32.4%	26.7%
P value	0.306		**0.001**		

Item 39. 5-8 In a slimmed lady breast cancer patient plan to receive nipple sparing mastectomy and no radiotherapy plan, your choice of reconstruction is

A Pre-pectoral implant: 5
B Sub-pectoral implant: 39
C Autologous flap: 6
D Pedicle flap: 4
E Biological material: 1
F Unknown: 5
G Abstain: 9

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	8.7%	4.3%	0	11.8%	6.7%
B	61.0%	47.9%	40.0%	58.8%	73.3%
C	4.3%	17.4%	5.0%	14.7%	0
D	4.3%	8.7%	20.0%	0	0
E	2.2%	0	5.0%	0	0
F	6.5%	8.7%	20.0%	0	6.7%
G	13.0%	13.0%	10.0%	14.7%	13.3%
P value	0.549		**0.009**		

Item 40. 5-9 In an obese lady breast cancer patient with ptotic breast plan to receive nipple sparing mastectomy and no radiotherapy planned, your choice of reconstruction is

A Pre-pectoral implant: 12
B Sub-pectoral implant: 14
C Autologous flap: 24
D Pedicle flap: 5
E Biological material: 0
F Unknown: 7
G Abstain: 7

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	19.6%	13.0%	15.0%	17.7%	20.0%
B	19.6%	21.8%	5.0%	29.4%	20.0%
C	39.1%	26.2%	40.0%	29.4%	40.0%
D	4.3%	13.0%	10.0%	5.9%	6.7%
E	0	0	0	0	0
F	8.7%	13.0%	30.0%	2.9%	0
G	8.7%	13.0%	0	14.7%	13.3%
P value	0.649		**0.046**		

Item 41. 6-1 A young lady breast cancer patient plan to receive nipple sparing mastectomy and plan post-mastectomy radiotherapy, in your opinion, the immediate pre-pectoral implant-based reconstruction is contraindication

A Yes: 32
B No: 15
C Depends on other factor: 15
D Unknown: 3
E Abstain: 4

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	39.2%	61.0%	50.0%	44.2%	46.6%
B	23.9%	17.4%	20.0%	20.6%	26.7%
C	26.1%	13.0%	25.0%	23.5%	13.3%
D	4.3%	4.3%	5.0%	2.9%	6.7%
E	6.5%	4.3%	0	8.8%	6.7%
P value	0.527		0.933		

Item 42. 6-2 A young lady breast cancer patient plan to receive nipple sparing mastectomy and plan post-mastectomy radiotherapy, in your opinion, the immediate sub-pectoral implant-based reconstruction is contraindication

A Yes: 9 B No: 34 C Depends on other factor: 21

D Unknown: 3 E Abstain: 2

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	10.9%	17.4%	15.0%	14.7%	6.7%
B	47.7%	52.2%	40.0%	55.9%	46.7%
C	37.0%	17.4%	40.0%	20.6%	40.0%
D	2.2%	8.7%	5.0%	2.9%	6.6%
E	2.2%	4.3%	0	5.9%	0
P value	0.375		0.667		

Item 43. 6-3 A young lady breast cancer patient plan to receive nipple sparing mastectomy and plan post-mastectomy radiotherapy, in your opinion, the immediate autologous flap reconstruction is contraindication

A Yes: 7 B No: 47 C Depends on other factor: 12

D Unknown: 0 E Abstain: 3

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	6.5%	17.4%	5.0%	5.9%	26.7%
B	69.6%	65.3%	75.0%	73.6%	46.7%
C	19.6%	13.0%	20.0%	17.6%	13.3%
D	0	0	0	0	0
E	4.3%	4.3%	0	2.9%	13.3%
P value	0.531		0.105		

Item 46. 6-6 Your preference of implant-based reconstruction for patients plane to receive post mastectomy radiotherapy after nipple sparing mastectomy is (limited to selecting only one)

A Any type: 6
B Highly cohesive implant: 6
C Smooth implant: 12
D Polyurethane implant: 2
E Synthetic mesh: 0
F Unknown: 20
G Abstain: 23

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	8.7%	8.7%	10.0%	11.8%	0
B	10.9%	4.3%	10.0%	5.9%	13.3%
C	13.0%	26.1%	5.0%	23.5%	20.1%
D	2.2%	4.3%	5.0%	2.9%	0
E	0	0	0	0	0
F	26.1%	34.9%	50.0%	14.7%	33.3%
G	39.1%	21.7%	20.0%	41.2%	33.3%
P value	0.508		0.226		

Item 51. 7-3 The skin flap discoloration happen immediately at recovery room of operation theater, your action to differentiate poor arterial perfusion or poor venous return is

A Doppler ultrasound: 15
B Angio study: 0
C Repeat ICG injection: 5
D Clinical judgement: 31
E Unknown: 7
F Abstain: 11

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	19.6%	26.1%	15.0%	26.5%	20.0%
B	0	0	0	0	0
C	4.3%	13.0%	0	11.8%	6.7%
D	47.8%	39.2%	55.0%	38.2%	46.6%
E	10.9%	8.7%	20.0%	5.9%	6.7%
F	17.4%	13.0%	10.0%	17.6%	20.0%
P value	0.661		0.498		

Item 52. 7-4 The following medication might help to improve the perfusion of skin flap after nipple sparing mastectomy

7-4-1 Light manual massage

A Yes: 20 B No: 21 C Depends on artery or vein impairment: 9

D Unknown: 10 E Abstain: 9

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	30.8%	23.5%	23.1%	36.7%	28.3%	30.4%	30.0%	29.4%	26.7%
B	34.6%	17.6%	36.0%	23.0%	32.6%	26.1%	25.0%	35.3%	26.7%
C	7.7%	29.5%	17.9%	6.7%	10.9%	17.4%	25.0%	5.9%	13.2%
D	11.5%	23.5%	17.9%	10.0%	17.4%	8.7%	20.0%	14.7%	6.7%
E	15.4%	5.9%	5.1%	23.3%	10.9%	17.4%	0	14.7%	6.7%
P value	0.083		0.070		0.729		0.268		

Item 53. 7-4 The following medication might help to improve the perfusion of skin flap after nipple sparing mastectomy

7-4-2 Low molecular weight dextran

A Yes: 30 B No: 10 C Depends on artery or vein impairment: 6

D Unknown: 12 E Abstain: 11

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	42.3%	47.1%	43.7%	43.3%	34.8%	61.0%	50.0%	47.1%	26.7%
B	17.3%	5.9%	17.9%	10.0%	19.6%	4.3%	15.0%	14.7%	13.3%
C	5.8%	17.6%	12.8%	3.3%	6.5%	13.0%	15.0%	5.9%	6.7%
D	15.4%	23.5%	17.9%	16.7%	23.9%	4.3%	20.0%	17.6%	13.3%
E	19.2%	5.9%	7.7%	26.7%	15.2%	17.4%	0	14.7%	40.0%
P value	0.265		0.175		0.061		0.176		

Item 54. 7-4 The following medication might help to improve the perfusion of skin flap after nipple sparing mastectomy

7-4-3 Prostaglandin

A Yes: 32 B No: 10 C Depends on artery or vein impairment: 6

D Unknown: 11 E Abstain: 10

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	44.2%	52.9%	51.3%	40.0%	34.8%	69.6%	50.0%	52.9%	26.7%
B	17.3%	5.9%	12.8%	16.7%	19.6%	4.3%	10.0%	11.8%	26.7%
C	7.7%	11.8%	12.8%	3.3%	8.7%	8.7%	15.0%	5.9%	6.7%
D	13.5%	23.5%	15.4%	16.7%	23.9%	0	25.0%	14.7%	6.7%
E	17.3%	5.9%	7.7%	23.3%	13.0%	17.4%	0	14.7%	33.2%
P value	0.466		0.260		**0.016**		0.100		

Item 55. 7-4 The following medication might help to improve the perfusion of skin flap after nipple sparing mastectomy

7-4-4 Transamin

A Yes: 7 B No: 35 C Depends on artery or vein impairment: 6

D Unknown: 11 E Abstain: 10

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	9.6%	11.8%	5.1%	16.7%	10.9%	8.7%	10.0%	2.9%	26.7%
B	55.8%	35.3%	59.0%	40.0%	47.8%	56.5%	45.0%	61.8%	33.3%
C	5.7%	17.6%	12.8%	3.3%	8.7%	8.7%	15.0%	8.8%	0
D	11.5%	29.4%	15.4%	16.7%	19.6%	8.7%	30.0%	11.8%	6.7%
E	17.3%	5.9%	7.7%	23.3%	13.0%	17.4%	0	14.7%	33.3%
P value	0.140		0.089		0.802		**0.010**		

Item 56. 7-4 The following medication might help to improve the perfusion of skin flap after nipple sparing mastectomy

7-4-5 Nitroglycerin

A Yes: 11 B No: 18 C Depends on artery or vein impairment: 7

D Unknown: 22 E Abstain: 11

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	17.3%	11.8%	17.9%	13.3%	10.9%	26.1%	15.0%	17.6%	13.3%
B	32.7%	5.9%	23.1%	30.0%	30.5%	17.4%	25.0%	29.4%	20.0%
C	7.7%	17.6%	15.4%	3.3%	13.0%	4.3%	15.0%	11.8%	0
D	23.1%	58.8%	35.9%	26.7%	30.4%	34.8%	45.0%	26.5%	26.7%
E	19.2%	5.9%	7.7%	26.7%	15.2%	17.4%	0	14.7%	40.0%
P value	0.021		0.123		0.342		0.120		

Item 58. 8-2 The negative pressure vacuum ball drain on chest wall and axillary fossa after nipple sparing mastectomy with immediate reconstruction, should be need with

A High pressure: 3 B Low pressure: 41 C Either: 8

D Unknown: 12 E Abstain: 5

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	4.3%	4.3%	0	8.8%	0
B	56.6%	65.2%	55.0%	61.8%	60.0%
C	8.7%	17.4%	15.0%	5.8%	20.0%
D	19.6%	13.0%	30.0%	11.8%	13.3%
E	10.9%	0	0	11.8%	6.7%
P value	0.397		0.247		

Item 59. 8-3 The timing of negative pressure vacuum ball drain removal after nipple sparing mastectomy with immediate reconstruction should be

A As early as possible within one week: 4

B Daily amount of drain less than 20c.c: 22

C Daily amount of drain less than 30c.c: 21

D Daily amount of drain less than 30c.c, maximal 2 week: 11

E Unknown: 7 F Abstain: 4

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	7.7%	0	5.1%	6.7%	4.3%	8.7%	5.0%	5.9%	6.7%
B	34.6%	23.5%	33.4%	30.0%	30.4%	34.8%	35.0%	35.3%	20.0%
C	26.9%	41.2%	25.6%	36.7%	28.3%	34.8%	30.0%	26.5%	40.0%
D	19.2%	5.9%	15.4%	16.7%	17.4%	13.0%	0	20.6%	26.6%
E	5.8%	23.5%	15.4%	3.2%	10.9%	8.7%	30.0%	2.9%	0
F	5.8%	5.9%	5.1%	6.7%	8.7%	0	0	8.8%	6.7%
P value	0.152		0.651		0.691		0.040		

Item 60. 8-4 Timing of upper limb active exercise on same site of mastectomy with immediate reconstruction

A As soon as possible on 2nd day: 12 B As patient tolerable: 26

C After vacuum ball removal: 19 D Unknown: 8 E Abstain: 4

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	21.2%	5.8%	10.3%	26.7%	19.6%	13.0%	15.0%	14.7%	26.7%
B	36.5%	41.2%	41.0%	33.2%	32.6%	47.9%	35.0%	41.2%	33.3%
C	26.9%	29.4%	28.2%	26.7%	32.6%	17.4%	20.0%	29.4%	33.3%
D	11.5%	11.8%	15.4%	6.7%	8.7%	17.4%	25.0%	8.8%	0
E	3.8%	11.8%	5.1%	6.7%	6.5%	4.3%	5.0%	5.9%	6.7%
P value	0.524		0.394		0.444		0.546		

Item 61. 8-5 Your description about skin complication in medical records is

A Ischemia grade※1: 27 B CCS※2 : 1 C Expanded classification※3 : 0

D By physician: 30 E Unknown: 7 F Abstain: 4

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	39.1%	39.1%	45.0%	32.4%	46.7%
B	2.2%	0	0	2.9%	0
C	0	0	0	0	0
D	43.5%	43.6%	30.0%	50.0%	46.7%
E	8.7%	13.0%	25.0%	5.9%	0
F	6.5%	4.3%	0	8.8%	6.6%
P value	0.923		0.189		

Item 62. 8-6 Your description about nipple-areolar complex complication in medical accord is

A Ischemia grade※1: 29 B CCS※2 : 2 C Expanded classification※3 : 0

D By physician: 27 E Unknown: 7 F Abstain: 4

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	43.5%	39.1%	45.0%	38.2%	46.7%
B	4.3%	0	5.0%	2.9%	0
C	0	0	0	0	0
D	37.0%	43.6%	25.0%	44.2%	46.7%
E	8.7%	13.0%	25.0%	5.9%	0
F	6.5%	4.3%	0	8.8%	6.6%
P value	0.800		0.224		

Item 63. 8-7 Your description about autologous reconstruction

A Ischemia grade※1: 15 B CCS※2 : 5 C Expanded classification※3 : 2
D By physician: 27 E Unknown: 9 F Abstain: 11

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	19.6%	26.1%	25.0%	23.5%	13.3%
B	8.7%	4.3%	10.0%	2.9%	13.3%
C	4.3%	0	5.0%	2.9%	0
D	39.1%	39.2%	25.0%	44.2%	46.7%
E	10.9%	17.4%	25.0%	11.8%	0
F	17.4%	13.0%	10.0%	14.7%	26.7%
P value	0.794		0.404		

Item 64. 8-8 Your description about implant-based reconstruction

A Ischemia grade※1: 15 B CCS※2 : 4 C Expanded classification※3 : 4
D By physician: 28 E Unknown: 8 F Abstain: 10

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	19.6%	26.1%	30.0%	20.6%	13.3%
B	6.5%	4.3%	5.0%	2.9%	13.3%
C	6.5%	4.3%	5.0%	8.8%	0
D	39.1%	43.6%	30.0%	44.2%	46.7%
E	10.9%	13.0%	25.0%	8.8%	0
F	17.4%	8.7%	5.0%	14.7%	26.7%
P value	0.915		0.214		

Item 67. 10-1 Do you accept that the oncological safety of nipple sparing mastectomy in comparable to conventional mastectomy

A Yes: 60 B No: 2 C Only stage I disease: 5
D Unknown: 1 E Abstain: 1

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	84.6%	94.1%	89.7%	83.4%	87.0%	87.0%	85.0%	91.2%	79.9%
B	1.9%	5.9%	2.6%	3.3%	4.3%	0	5.0%	0	6.7%
C	9.6%	0	5.1%	10.0%	6.5%	8.7%	5.0%	8.8%	6.7%
D	1.9%	0	2.6%	0	2.2%	0	5.0%	0	0
E	1.9%	0	0	3.3%	0	4.3%	0	0	6.7%
P value	0.539		0.602		0.463		0.386		

Item 69. 10-3 For the ipsilateral breast after nipple sparing mastectomy, the mammography done in

A Every 6 months: 4 B Every year: 28 C Every 2 years: 3
D Not suggested: 23 E Depends on other factor: 8 F Unknown: 0
G Abstain: 3

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	3.8%	11.8%	2.6%	10.0%	4.3%	8.7%	10.0%	2.9%	6.7%
B	40.4%	41.2%	46.1%	33.3%	39.2%	43.5%	50.0%	44.1%	20.0%
C	5.8%	0	2.6%	6.7%	2.2%	8.7%	0	5.9%	6.7%
D	38.5%	17.6%	30.8%	36.7%	34.8%	30.4%	25.0%	26.5%	59.9%
E	11.5%	11.8%	12.8%	10.0%	13.0%	8.7%	10.0%	14.7%	6.7%
F	0	0	0	0	0	0	0	0	0
G	0	17.6%	5.1%	3.3%	6.5%	0	5.0%	5.9%	0
P value	**0.021**		0.642		0.563		0.436		

Item 70. 10-4 In clinical surveillance for ipsilateral site after nipple sparing mastectomy, breast ultrasound is suggested

A Every 6 months: 59
B Every year: 6
C Every 2 years: 1
D Not suggested: 0
E Depends on other factor: 2
F Unknown: 0
G Abstain: 1

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	82.6%	91.4%	90.0%	82.4%	86.6%
B	13.0%	0	10.0%	8.8%	6.7%
C	0	4.3%	0	2.9%	0
D	0	0	0	0	0
E	2.2%	4.3%	0	2.9%	6.7%
F	0	0	0	0	0
G	2.2%	0	0	2.9%	0
P value	0.208		0.893		

Item 71. 10-5 In clinical surveillance of ipsilateral site breast after nipple sparing mastectomy, breast MRI is suggested

A Every 6 months: 1
B Every year: 9
C Every 2 years: 5
D Not suggested: 18
E Depends on other factor: 32
F Unknown: 1
G Abstain: 3

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	0	4.3%	0	0	6.7%
B	15.2%	8.7%	25.0%	2.9%	20.0%
C	6.5%	8.7%	0	11.8%	6.7%
D	28.3%	21.8%	10.0%	32.4%	33.3%
E	45.7%	47.9%	65.0%	50.0%	13.3%
F	0	4.3%	0	0	6.7%
G	4.3%	4.3%	0	2.9%	13.3%
P value	0.561		**0.008**		

Item 72. 11-1 Do you take the pre-operative and post-operative photo as standard format for objective outcome assessment

A Yes: 38 B No: 11 C Sometimes: 11

D Depend on patient: 3 E Unknown: 1 F Abstain: 5

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	54.4%	56.6%	45.0%	64.8%	46.8%
B	17.4%	13.0%	20.0%	14.7%	13.3%
C	15.2%	17.4%	30.0%	8.8%	13.3%
D	4.3%	4.3%	0	2.9%	13.3%
E	2.2%	0	5.0%	0	0
F	6.5%	8.7%	0	8.8%	13.3%
P value	0.974		0.189		

Item 73. 11-2 What tool to evaluate the aesthetic outcomes including volume, symmetry, shape and satisfaction for patients after nipple sparing mastectomy in your practice

A Doctor's vision: 24 B Patients report: 12 C Aesthetic Items Scale: 8

D 3-D image: 6 E Others: 2 F Unknown: 5

G Abstain: 12

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	34.9%	34.8%	30.0%	32.4%	46.6%
B	17.4%	17.4%	30.0%	14.7%	6.7%
C	13.0%	8.7%	10.0%	8.8%	20.0%
D	8.7%	8.7%	10.0%	8.8%	6.7%
E	4.3%	0	0	5.9%	0
F	4.3%	13.0%	20.0%	2.9%	0
G	17.4%	17.4%	0	26.5%	20.0%
P value	0.827		0.096		

Item 74. 11-3 Do you evaluate the sensation of skin flap and the nipple areolar complex

A Yes: 25 B No: 20 C Occasionally: 19 D Unknown: 1 E Abstain: 4

Option	Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	34.8%	39.1%	30.0%	38.2%	40.0%
B	26.1%	34.9%	40.0%	29.4%	13.3%
C	30.4%	21.7%	25.0%	20.6%	46.7%
D	2.2%	0	5.0%	0	0
E	6.5%	4.3%	0	11.8%	0
P value	0.822		0.169		

Item 76. 11-5 Do you consider the incision length of nipple sparing mastectomy is a critical issue in aesthetic outcome

A Yes: 29 B No: 16 C Depends on patient: 21
D Unknown: 1 E Abstain: 2

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	42.3%	41.2%	48.7%	33.3%	34.8%	56.6%	60.0%	32.4%	40.0%
B	25.0%	17.6%	25.6%	20.0%	28.3%	13.0%	10.0%	29.4%	26.7%
C	30.8%	29.4%	23.1%	40.0%	32.6%	26.1%	25.0%	32.4%	33.3%
D	1.9%	0	2.6%	0	0	4.3%	0	2.9%	0
E	0	11.8%	0	6.7%	4.3%	0	5.0%	2.9%	0
P value	0.149		0.188		0.167		0.591		

Item 77. 11-6 Do you consider the incision location of nipple sparing mastectomy is a critical issue in aesthetic outcome

A Yes: 46 B No: 4 C Depends on patient: 18 D Unknown: 0 E Abstain: 1

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	63.5%	76.5%	79.5%	50.0%	63.0%	74.0%	80.0%	58.8%	66.7%
B	5.7%	58%	5.1%	6.7%	6.5%	4.3%	0	11.8%	0
C	30.8%	11.8%	15.4%	40.0%	28.3%	21.7%	20.0%	26.5%	33.3%
D	0	0	0	0	0	0	0	0	0
E	0	5.9%	0	3.3%	2.2%	0	0	2.9%	0
P value	0.161		0.057		0.766		0.361		

Item 78. 12-1 Does your institute routinely finish the patient reported outcome questionnaire after nipple sparing mastectomy

A Yes: 10 B No: 37 C Sometimes: 12 D Unknown: 3 E Abstain: 7

Option	Voters by clinical practice	
	Academic center (n=46)	Community teaching (n=23)
A	19.6%	4.3%
B	45.7%	69.7%
C	21.7%	8.7%
D	4.3%	4.3%
E	8.7%	13.0%
P value	0.209	

Item 79. 12-2 Does your institute provide standard form of patient reported outcome with IRB certificate

A Yes: 11 B No: 40 C Unknown: 11 D Abstain: 7

Option	Voters by clinical practice	
	Academic center (n=46)	Community teaching (n=23)
A	21.7%	4.3%
B	50.0%	74.0%
C	17.4%	13.0%
D	10.9%	8.7%
P value	0.197	

Item 80. 12-3 For quality of life, satisfaction evaluation, the most material provided with internationally validated tool is

A BREAST-Q: 30
B EORIC QLQ-BRECON23: 2
C EORIC QLQ-BR45: 3
D Homemade form: 1
E No specific one: 4
F Unknown: 17
G Abstain: 12

Option	Voters by clinical practice	
	Academic center (n=46)	Community teaching (n=23)
A	47.8%	34.8%
B	4.3%	0
C	2.2%	8.7%
D	2.2%	0
E	6.5%	4.3%
F	17.4%	39.1%
G	19.6%	13.0%
P value	0.317	

Item 81. 12-4 In general, do your patients complain the loss of nipple sensation always bother her

A Frequently: 5
B Sometimes: 14
C Occasionally: 30
D Not at all: 12
E Unknown: 4
F Abstain: 4

Option	Voters by clinical practice	
	Academic center (n=46)	Community teaching (n=23)
A	8.7%	4.3%
B	23.9%	13.0%
C	43.5%	43.6%
D	8.7%	34.8%
E	6.5%	4.3%
F	8.7%	0
P value	0.094	

Item 82. 13-1 In your institute, the nipple sparing mastectomy can be performed independently by

A Fellow: 11
B Chief residence: 3
C Senior residence: 1
D Only attend staff: 50
E Unknown: 2
F Abstain: 2

Option	Voters by clinical practice	
	Academic center (n=46)	Community teaching (n=23)
A	10.9%	26.1%
B	6.5%	0
C	2.2%	0
D	73.9%	69.6%
E	2.2%	4.3%
F	4.3%	0
P value	0.356	

Item 83. 13-2 Any training program of nipple sparing mastectomy in your institute

A Yes: 13
B No: 25
C Yes, but not specific for nipple sparing mastectomy: 27
D Unknown: 2
E Abstain: 2

Option	Voters by clinical practice	
	Academic center (n=46)	Community teaching (n=23)
A	26.1%	4.3%
B	26.1%	56.6%
C	41.3%	34.8%
D	4.3%	0
E	2.2%	4.3%
P value	0.057	

Item 84. 13-3 Will you implement the idea of nipple sparing mastectomy to your colleague

A Yes: 56 B No: 2 C Later: 4 D Unknown: 2 E Abstain: 5

Option	Voters by sex		Voters by age (years)		Voters by clinical practice		Voters by experience in breast cancer surgery (years)		
	Male (n=52)	Female (n=17)	Age <50 (n=39)	Age>50 (n=30)	Academic center (n=46)	Community teaching (n=23)	0~10 (n=20)	11~30 (n=34)	>30 (n=15)
A	84.6%	70.6%	82.1%	80.0%	84.8%	74.0%	75.0%	82.4%	86.6%
B	1.9%	5.9%	2.6%	3.3%	0	8.7%	5.0%	0	6.7%
C	5.8%	5.9%	5.1%	6.7%	4.3%	8.7%	10.0%	5.8%	0
D	0	11.7%	2.6%	3.3%	2.2%	4.3%	10.0%	0	0
E	7.7%	5.9%	7.7%	6.7%	8.7%	4.3%	0	11.8%	6.7%
P value	0.127		0.997		0.251		0.203		

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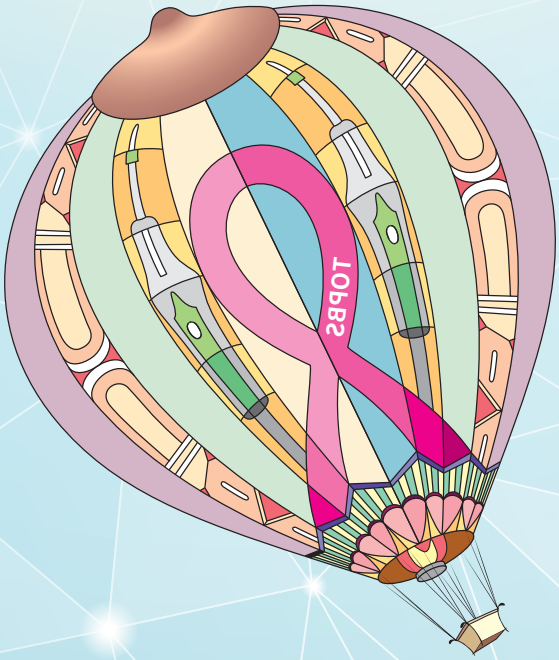
Note



Address：No. 5, Fuxing St, Guishan District, Taoyuan City, 33305
Telephone：03-3281200 ext.3605
E-mail：TOPBS106@gmail.com
Website：www.topbs.org.tw
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