Indian Society of Medical and Paediatric Oncology (ISMPO)—Breast Cancer in Young Guidelines

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Abstract

Breast cancer (BC) is the most common type of cancer globally and in India. In India, BC is more common among younger women compared with Western counterparts. Younger women with BC tend to have a less favorable outcome as they are more likely to have aggressive tumors. Younger women are not well represented in BC management studies as the median age at diagnosis is in the late 50s to early 60s. This can lead to difficulty in using risk-stratification models and molecular tools among young BC patients and may result in overtreatment. Therefore, Indian Society of Medical and Pediatric Oncology gathers and organizes available evidence from published literature to create a guide specifically for young BC patients in low- and middle-income countries like India.

Keywords
- breast cancer in young
- breast cancer
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Introduction

Breast cancer (BC) is the most common type of cancer globally and in India.[1] According to data from Globocan 2020, BC accounted for 13.5% of all cancer cases and 10.6% of all deaths in India. The incidence of BC in India is expected to rise from 25.8 per 100,000 women in 2020 to 35 per 100,000 women by 2026.[1] By the year 2025, it is estimated that there will be an annual increase of 230,000 new BC patients with a marked increase in young women with BC (YBC) cases as per the National Cancer Registry Program.[2]

In India, BC is more common among younger women compared with Western counterparts.[3] This may be due to the country's population pyramid which has a large proportion of young people. Women diagnosed with BC at or younger than 40 years of age are defined as YBC globally although some extend the age limit to 45 years.[3,4] Similarly, women younger than 35 years of age with BC are defined as having very YBC.[4]

YBC tends to have a less favorable outcome as they are more likely to have aggressive tumors of high grade, basal-like or HER2-enriched, and higher prevalence of germline mutations.[1] Germline mutation profiling is recommended for these women and they may need genetic and fertility counselling, surveillance, and risk-reducing surgeries.[5] Diagnostic delays among younger women can lead to advanced disease and add to the psychosocial and financial burden.[6]

YBC women are not well represented in clinical trials as the median age at diagnosis is in the late 50s to early 60s. This can lead to difficulty in using risk stratification models and molecular tools among young BC patients and may result in overtreatment.[7] Prospective trials specifically for YBC women are needed to ensure appropriate treatment. Examples of such studies include POSH cohort study (United Kingdom), Helping Ourselves, Helping Others: The Young Women's Breast Cancer Study (United States and Europe). These studies show that in young patients, a greater proportion of luminal B and estrogen receptor (ER)-negative tumors were present.[5,8]

Well-designed multicenter prospective trials dedicated to YBC patients should be conducted globally, with India being well-suited to frame appropriate study questions due to its higher proportion of YBC cases. As a first step in our collaborative effort, we aimed to gather and organize available evidence from published literature to create a guide specifically for YBC patients in low- and middle-income countries like India.

Methodology

The ISMPO-BCY recommendations were adapted from current guidelines from the National Comprehensive Cancer Network and ESMO-BCY guidelines.[9] A group of 20 YBC experts from the entire country were invited. Special subgroups of two to three experts were formed to provide recommendations after thorough literature search for specific questions. These recommendations were then reviewed and updated by all 20 experts via email. Members with potential conflicts of interest were instructed to abstain from voting on certain questions. The recommendations were discussed and any areas of disagreement or controversy were addressed before final approval by all experts. Then final voting for each recommendation was done by all 20 experts (►**Tables 1–7**, ►**Supplementary Tables S1** and **S2** [online only]).

General Considerations When Caring for Young Women with Breast Cancer

When treating a BC in young (BCY) woman, it is important to have a multidisciplinary team (MDT) that includes specialists from various fields such as breast and plastic surgery, medical and radiation oncology, pathology, radiology, breast care nursing, genetics, physical therapy, fertility, sexual therapy, and psychology. The best care for these patients is delivered in specialized breast clinics dedicated to BCY women with early BC (EBC) or advanced-stage BC (ABC). Treatment decisions should be based on the same factors irrespective of the age of patient. The experts emphasized the need for online tools and patient support groups in local languages to help overcome barriers to accessing support such as childcare, work schedules, and distance from health care services.

The experts also noted that there is still a lack of evidence-based standards for certain issues in the treatment of YBC

Table 1 Levels of evidence and grades of recommendation

Levels of evidence (LoE)
I. Evidence from at least one large randomized, controlled trial of good methodological quality (low potential for bias) or meta-analyses of well-conducted randomized trials without heterogeneity
II. Small randomized trials or large randomized trials with a suspicion of bias (lower methodological quality) or meta-analyses of such trials or of trials with demonstrated heterogeneity
III. Prospective cohort studies
IV. Retrospective cohort studies or case–control studies
V. Studies without control group, case reports, experts' opinions
Grades of recommendation (GoR)
A. Strong evidence for efficacy with a substantial clinical benefit, strongly recommended
B. Strong or moderate evidence for efficacy but with a limited clinical benefit, generally recommended
C. Insufficient evidence for efficacy or benefit does not outweigh the risk or the disadvantages (adverse events, costs), optional
D. Moderate evidence against efficacy or for adverse outcome, generally not recommended
E. Strong evidence against efficacy or for adverse outcome, never recommended

Table 2 General guidelines

Guidelines	LoE, GoR	Consensus
In India, BC is the most common cancer in women. However, several issues in the treatment of young patients (<40) with BC are yet to be answered.	Expert opinion	100%
Online programs and patient support groups should be developed and promoted in several local languages to overcome barriers to accessing support.	Expert opinion	100%
There should be specialized multidisciplinary breast cancer clinics for YBC (EBC, or ABC).	Expert opinion	100%
Every case should be ideally discussed by the MDT to plan the treatment and address specific issues.	Expert opinion	100%
Young age should not be the sole reason to prescribe a more aggressive treatment than other age groups. The following factors should impact the choice of treatment: tumor stage, histological grade, biological characteristic of the tumor (ER/PR, HER-2 receptor status, proliferative markers [e.g., K_i-67], genetic status [if available], patient performance status, and comorbidities).	Expert opinion	100%
Systematic research is needed in the identification of age-specific molecular, biological, and genomic aberrations for tailored therapeutic interventions.	Expert opinion	100%
In India because of low per capita income, high expenses on health care, and long waiting lists in publicly funded institutes, planning treatment in routine practice requires careful consideration of the strength of evidence for long-term clinical benefit and cost-effectiveness. Therefore, safe and effective strategies should be developed.	Expert opinion	100%
Young male breast cancer		
Young male breast cancer should be treated as per national guidelines.	Expert opinion	100%
The standard adjuvant ET is Tamoxifen		
An AI alone should not be used; if needed, combine it with LHRH analog.	Expert opinion	100%
Clinical trials should allow young male breast cancer to participate.	Expert opinion	95%

Abbreviations: ABC, advanced-stage breast cancer; AI, aromatase inhibitors; BC, breast cancer; EBC, early breast cancer; ET, endocrine therapy; GoR, grades of recommendation; LoE, levels of evidence; MDT, multidisciplinary team; YBC, young women with breast cancer.

Table 3 Assessment and treatment guidelines early and advanced breast cancer

Guidelines	LoE, GoR	Consensus
Screening, diagnosis, and imaging for staging and follow-up		
No clear role of screening for early detection of BC in healthy, average risk young women	[I, A]	100%
Opportunistic screening with USG and MRI breast may be considered in higher risk individuals like an individual with genetic predisposition, very dense breast, RT for childhood or young-adulthood malignancy	Expert opinion	100%
Young women with BRCA1/2mutation carriers and other high-risk factors including predisposing mutation (e.g., p53, PALB2, CHEK2) should undergo annual surveillance with MRI and mammography with or without USG	[II, A]	100%
Gynecological surveillance every 6 monthly can be considered for BRCA1/ 2 mutated women and other cancer susceptibility gene carriers (e.g., RAD51C, p53, BRIP1) who have not undergone RRSO	Expert opinion	95%
Methods of diagnosis and staging evaluation should be as per older women	[III, C]	100%
Tools for awareness, early detection, and surveillance should be developed	Expert opinion	100%
Genetic counselling and testing		
Genetic counselling should be offered to every young female with BC, preferably before the start of treatment according to national/international guidelines. For those who are not ready to consider genetic issues at diagnosis, access to genetic counselling should be offered again at follow-up to address issues of surveillance and other primary tumors	[III, B]	100%
Genetic testing should be done according to personal and family history	[III, B]	90%
In ideal situations comprehensive panels testing should be done, however, where not feasible minimum BRCA1/2 is recommended	[II, C]	100%
Loco-regional treatment		
A young patient with EBC should get treated with surgery like older patients, preferably with BCS as there is no difference in overall survival as compared with mastectomy	[I, A]	100%

(*Continued*)

Table 3 (*Continued*) Assessment and treatment guidelines early and advanced breast cancer

Guidelines	LoE, GoR	Consensus
Oncoplastic repair techniques should be discussed with all patients treated with BCS in view of maximizing cosmetic results. Attention to oncological principles is necessary while planning oncoplastic BCS	[II, C]	100%
All clinic-radiologically node-negative patients should have axillary staging procedure just like in older women	[I, B]	100%
In case of positive axillary node on SNB or LAS, a complete AXLND should be offered	[I, B]	95%
A young patient with either invasive or preinvasive BC need not undergo risk-reducing bilateral mastectomy if not carrying any high-risk mutations	[I, B]	100%
Planning of loco-regional treatment after NACT should be independent of age	Expert opinion	100%
In case of locally advanced tumors (LN+ TNBC or HER2 positive T >3 cm), NACT should be considered	[II, B]	100%
Appropriate identification method of tumor bed biopsy scars, clip placements is necessary before starting chemotherapy or after 1–2 cycles to facilitate post-chemotherapy surgery	[II, B]	100%
Tumor bed delineation with intra-operative clip placements is mandatory in case of BCS, so as to facilitate radiation boost delivery. This is even more important in the setting of oncoplastic BCS	[II, B]	100%
Post-chemotherapy axillary surgery should involve a complete AXLND, especially if node was involved pre-chemotherapy	[II, B]	95%
Post-chemotherapy BCS in LABC is safe in carefully selected cases	[II, B]	100%
Adjuvant treatment systemic treatment Endocrine therapy		
Before the start of either chemotherapy or ET, all young patients should be counselled regarding associated risks, treatment-related amenorrhea, or premature menopause	Expert opinion	100%
Detailed descriptions of all the available strategies to preserve fertility like techniques, timing, possible complications, success rates, costs, and ethical implications should be included in fertility counselling	Expert opinion	100%
Some important factors should be considered while choosing between the available FP techniques like the patient's age and ovarian reserve, type of anticancer therapy planned, availability of a partner at the time of diagnosis, the time available before the initiation of anticancer treatments, and the possibility that cancer metastasized to the ovaries	Expert opinion	100%
Addition of GnRH/LHRH analogues during chemotherapy is recommended irrespective of ER/PR status and other methods of FP in view of OFS	Expert opinion	100%
Apart from clinical trials, neoadjuvant ET should not be used in young patients	Expert opinion	100%
All patients with HR-positive disease should receive adjuvant ET	[I, A]	100%
Tamoxifen alone for 5 years is indicated for clinically low risk patients and 10 years in high-risk patients (higher risk of recurrence (i.e., young age, high-grade tumor, lymph node +) and tolerance is not a question	[I, A]	100%
Switching to an AI, after 5 years of tamoxifen, should be considered for women who have become definitively postmenopausal	[I, A]	100%
The addition of a GnRH agonist (or ovarian ablation) to tamoxifen or an AI is indicated in patients at higher risk of relapse	[I, A]	100%
For a woman who becomes definitively postmenopausal (as is confirmed on biochemical testing), switching to AI after 5 years of tamoxifen and for high-risk patients should be considered	[I, A]	100%
The addition of GnRH agonist (or ovarian ablation) to ET is indicated in a patient with high risk of relapse	[I, A]	100%
AIs are contraindicated without ovarian suppression in premenopausal women	[I, A]	100%
To check menopausal status for patient on GnRHa, hormone levels should be measured at least twice at 3-monthly intervals as there are concerns that ovarian function is not suppressed (at baseline and during the course of treatment)	Expert opinion	100%
In patients with HR +/HER2 − , high-risk BC 2 years of adjuvant CDK4/6 inhibitors can be considered in combination with endocrine therapy doi: 10.1093/jnci/djx074	[I, B]	100%

Table 3 (*Continued*) Assessment and treatment guidelines early and advanced breast cancer

Guidelines	LoE, GoR	Consensus
Chemotherapy		
The indication and choice of ACT in young patients should be the same as that of older patients	Expert opinion	100%
The standard duration of treatment (minimum 4 and maximum of 8 cycles) should be preferably dose dense	[I, A]	100%
The addition of platinum in TNBC and BRCA+ patients increases the pCR rates and may be considered when NACT is indicated. But its long-term outcomes are still inconclusive	[I, B]	100%
There are no data on the use of platinum derivatives in the adjuvant setting and therefore these cannot be recommended	[I, A]	100%
Counselling regarding impact of addition of platinum on fertility and possibility of compromising dose and duration of standard chemotherapy drugs should be done	[I, B]	100%
For patient with TNBC with gBRCA mutation addition of adjuvant olaparib should be considered	[I, A]	100%
For patients with TNBC not achieving a pCR after standard NACT, the addition of adjuvant chemotherapy in the form of 6–8 cycles of oral capecitabine should be considered	[I, A]	100%
In patients with TNBC who are planned for preoperative chemotherapy, the addition of pembrolizumab (with the chemotherapy and for completion of 1 year following surgery) can be considered in selected high-risk young patients where approved if cost is not a constraint	[I, A]	90%
Adjuvant olaparib after completion of (neo)adjuvant chemotherapy provides significant benefit in DFS in women harboring a germline BRCA1/2 mutation who have high risk (stage II–III, HER2-negative TNBC:pT2Nx or pTxN1–3 or residual disease after NACT; HR + :pTxN2–3 or significant residual disease after NACT; EBC	[I, A]	90%
Anti-HER2 therapy		
Indication of anti-HER2 therapy including pertuzumab should be the same irrespective of age	[I, A]	100%
Weekly paclitaxel for 12 weeks with trastuzumab for 1 year without anthracyclines can be considered in highly selected patients with small, node negative, HER2+ BC	[II, B]	100%
General considerations in the adjuvant setting		
In view of long-life expectancy, careful attention should be paid to possible long-term toxicities of adjuvant treatment	Expert opinion	100%
Adjuvant bisphosphonates can be considered in young women receiving OFS	[I, B]	100%
IBC in young should be managed same as older patients	Expert opinion	100%
Assessment and treatment general guidelines in advanced breast cancer		
In a young patient with ABC, therapeutic recommendations should not differ from those for older patients with the same disease characteristics and extent	Expert opinion	100%

Abbreviations: ABC, advanced-stage breast cancer; ACT, adjuvant chemotherapy; AI, aromatase inhibitors; AXLND, axillary lymph node dissection; BC, breast cancer; DFS, disease-free survival; EBC, early breast cancer; ET, endocrine therapy; FP, fertility preservation; MRI, magnetic resonance imaging; OFS, ovarian function suppression; SNB, sentinel lymph node biopsy; TNBC, triple-negative breast cancer; USG, ultrasound.

Table 4 Additional considerations in women with hereditary-associated breast cancer

Guidelines	LoE, GoR	Consensus
For BC survivors and asymptomatic carriers of a BRCA1/2 mutation, RRSO should be discussed from the age of 35 years provided that the woman has completed the family	[II, B]	100%
For BRCA1 mutation carriers, RRSO is recommended between ages 35 and 40 and for BRCA2 mutation carriers around age 40, after considering patient's preferences and family history. No definitive evidence of improvement in BC survival by RRSO. However, it reduces the incidence of ovarian cancer by 95%	[II, B]	100%
Indications and timing of RRSO for other highly penetrant mutations should follow available international/national guidelines	[II, B]	100%
The radiotherapy treatment of EBC is independent of BRCA or any other constitutional genetic status, except for germline TP53 and ATM mutations, for which a very high risk of secondary cancers has been described after RT. Radiation therapy should be carefully discussed on an individual basis for these patients	[III, B]	100%

Abbreviations: BC, breast cancer; EBC, early breast cancer; GoR, grades of recommendation; LoE, levels of evidence; RRSO, reducing salpingo-oophorectomy.

Table 5 Recommendations for BCP and pregnancy after BC

Guidelines	LoE, GoR	Consensus
After the first trimester, standard chemotherapy can be offered to the majority considering the tumor stage and biology	Expert opinion	100%
Systemic therapy like ET, anti-HER2 therapies, immunotherapy, and bone-modifying agents should be avoided in all trimesters	[I, A]	100%
The patients with HR+ disease should complete at least 18–24 months of ET before attempting pregnancy (if they cannot wait till the completion of ET). The ET should be completed as planned after delivery and breastfeeding	[I, B]	100%
Patients on systemic therapy postdelivery should not breastfeed	Expert opinion	100%
Pregnancy after BC should not be discouraged even in patients with HR+ disease. The decision about pregnancy should depend on the patient's prognosis based on the initial stage and biology	[I, B]	100%

Abbreviations: BC, breast cancer; BCP, breast cancer diagnosed during pregnancy; ET, endocrine therapy; GoR, grades of recommendation; LoE, levels of evidence.

Table 6 Special situation: neuroendocrine breast cancer

Guidelines	LoE, GoR	Consensus
Chemotherapy agents can be selected based on histopathological characteristics inclusive of the percentage of tumor cells demonstrating neuroendocrine features and differentiation. A) >90% of tumor cells demonstrate neuroendocrine features: NEN A1: Well-differentiated—NET A2: Poorly differentiated—NEC: large-cell/small-cell variants: platinum/etoposide-containing regimens	Expert opinion	100%
B) <90% neuroendocrine differentiation: IBCs-NST with neuroendocrine differentiation taxane-based and/or anthracycline chemotherapy		
Endocrine and anti-HER2 therapies may be considered in HR+ and/or HER2+ carcinomas	Expert opinion	100%

Abbreviations: GoR, grades of recommendation; LoE, levels of evidence; NEC, neuroendocrine carcinoma.

patients. In India, low medical insurance coverage, financial insecurity, and inconsistent reimbursement decisions by insurance companies can lead to inadequate treatment and follow-up for YBC patients. Therefore, careful consideration must be given to the strength of evidence for long-term clinical benefit and cost-effectiveness when planning treatment.

Screening and Diagnostic Imaging for Staging and Follow-Up

There is no clear role for screening mammography in healthy young women with an average risk for BC. However, opportunistic screening with ultrasound (USG) or magnetic resonance imaging (MRI) may be used in specific settings as mentioned in ►**Table 3**. The experts recommend that diagnostic imaging and staging should generally follow the same guidelines as for older women. Breast USG is the first diagnostic approach for young and pregnant/lactating women. Tomosynthesis or contrast-enhanced digital mammography and/or MRI may be needed to determine the extent of the disease. Separate data for tomosynthesis in young women are not available.

Genetic Counselling and Testing

The experts recommend that genetic counselling should be offered to all BCY women, regardless of family history or tumor subtype. Genetic testing should follow local guidelines and take into account availability of resources and reimbursement policies. Patients should be provided with adequate information before undergoing genetic testing by a trained health professional and made aware of the potential impact of the results on their treatment and follow-up as well as on family members. While *BRCA1/2* are the most commonly mutated genes, addition of tests for other moderate- to high-penetrance genes is on the discretion of the genetic counsellor. The choice of laboratory for multi-gene panel testing is crucial and should include high-penetrance genes such as *BRCA1/2, p53*, and *PTEN* as well as moderate- to high-penetrance genes such as *CDH1, CHEK2, PALB2, RAD51C, BRIP1*, and *ATM*. Practice should be guided by national/international guidelines.[10] In ideal situations, multigene panels testing should be done, however, where not feasible minimum *BRCA1/2* is recommended as cost is a constraint. For those denying genetic counselling at diagnosis, access to such facilities should be offered again during follow-up, so as to address issues such as risk of other primary tumors, risk stratification for relatives, and surveillance.

Loco-regional Treatment

Surgery

While young age is a known risk factor for local recurrence after breast conservation surgery (BCS), mastectomy does

Table 7 Supportive and follow-up care guidelines

Guidelines	LoE, GoR	Consensus
Young women are at increased risk of psychosocial issues (premature menopause, treatment-related amenorrhea, weight gain, hair loss) that should be addressed regularly in routine cancer treatments and follow-up with the active involvement of patient and family members	[II, B]	100%
All young women should be counselled regarding the risk of getting pregnant while on treatment despite developing amenorrhea and the need for adequate nonhormonal contraception if they are sexually active	[I, B]	100%
All young women should be counselled/referred to specialist consultation if interested in FP before the commencement of any therapy	Expert opinion	100%
In asymptomatic patients, routine laboratory or imaging tests other than follow-up mammography are not recommended	[II, A]	100%
Annual bone density evaluation is recommended for patients on AIs or OFS	[I, A]	100%
Young patients should be counselled and motivated to adopt a healthy lifestyle: ● Regular exercise and maintain body weight for age ● Healthy and balanced diet ● Avoid smoking and cessation counselling in smokers Limit alcohol intake	Expert opinion	100%
At follow-up visits, in addition to cancer-related history and physical examination, the patient should receive a detailed history regarding physical or psychosocial sequelae of treatment and menopausal symptoms. Clinical examination is complemented with a mammogram (bilateral if BCS has been done) every 12–24 months	Expert opinion	100%
The follow-up frequency in absence of symptoms should be every 3–6 months for the first 3 years after therapy, 6–12 monthly for the next 2 years and annually thereafter up to 10 years and then 2 yearly	[II, A]	100%
Patients with a significant family history of cancer or known BRCA mutation should be kept on lifelong 6 monthly or annual follow-up as they have a much higher risk of contralateral BC and ovarian cancer even after risk-reducing surgeries	Expert opinion	100%

Abbreviations: BC, breast cancer; BCS, breast conservation surgery; FP, fertility preservation; GoR, grades of recommendation; LoE, levels of evidence; OFS, ovarian function suppression.

not improve overall survival (OS) in YBC patients unless clinically indicated.[11] Appropriate oncoplastic techniques should be used to optimize cosmetic outcomes after BCS.[12] However, in the Indian setting, care should be taken not to compromise oncological principles when planning oncoplastic BCS. If BCS is contraindicated, a modified radical mastectomy may be performed. In carefully selected patients, skin and nipple-sparing techniques can be used with immediate whole breast reconstruction.[13] Breast reconstruction immediately following mastectomy offers the same survival rates as mastectomy without reconstruction when performed by an expert. Reconstruction can be offered to interested patients but delays in starting adjuvant treatment due to surgical complications should be avoided as much as possible. Secondary reconstruction post-mastectomy may be preferred for those with locally advanced BC (LABC) or inflammatory BC (IBC) cancer who have had a poor response to neoadjuvant systemic treatment. The timing and technique of breast reconstruction should be discussed preoperatively on an individual basis, especially if post-mastectomy radiation therapy (RT) is indicated. Patients with EBC and no signs of cancer in their lymph nodes (LNs) should undergo an axillary staging procedure, either a sentinel LN biopsy or a lymphatic mapping and sentinel node sampling. If cancer is found in the LNs, a complete axillary LN dissection (AXLND) up to level 2/3 is recommended. After neoadjuvant chemotherapy (NACT), AXLND is the standard of care. Conservative axillary procedure in this setting should not be offered outside trial setting. Further research is needed to determine the role of conservative management after NACT. For patients with LABC or those with a poor tumor-to-breast ratio for BCS, NACT may be used. Before starting NACT, it is important to evaluate the tumor using imaging and mark its location with biopsy scars or clips. The surgical plan is determined based on how well the patient responds to NACT. In some cases, BCS may be safe.

Radiation Therapy

The indications for postoperative RT in YBC are the same as in older women. The field of irradiation should be determined based on the initial staging and posttreatment pathological staging. According to available literature, moderate hypofractionation (40–42.6 Gy/15–16 fractions) can be used in young women just like in other age groups.[14] A tumor bed boost is recommended for most young patients due to their age and other factors such as tumor grade. This can be delivered either sequentially or simultaneously.

Partial breast irradiation (PBI) or accelerated PBI should not be performed outside of clinical trials due to a lack of evidence. The decision to use postoperative RT should not

depend on *BRCA* status. The safety of RT in patients with moderate pathogenic gene variants such as *ATM* is uncertain and limited, so the risks and benefits should be discussed on an individual basis. In addition, in patients with *TP53* mutation, for whom RT is otherwise contraindicated to the high risk of secondary malignancies, role of RT should be discussed in case of higher chances of loco-regional recurrence. Avoiding RT may be considered if the patient agrees to close follow-up.

Adjuvant Systemic Treatment

The decision to use adjuvant chemotherapy (ACT) in YBC should be based on the same factors as in older patients. These include the extent of the disease, the biological characteristics of the tumor, and patient characteristics. Age alone should not be the criteria to overtreat BCY.

Gene Expression Signatures

Gene expression tests like Oncotype Dx, MammaPrint, Prosigna, Endopredict, and Breast Cancer Index can provide additional information about an individual's risk of recurrence and the potential benefit of chemotherapy.[7,15] However, it is important to note that women under 40 are underrepresented in studies evaluating these tests, particularly in studies of node-positive disease. In TAILORx study, researchers evaluated the use of the 21-gene Oncotype Dx recurrence score in women with HR+, HER2− BC. Patients were grouped into low, intermediate, or high risk of recurrence based on their score. Only 30% of those with a low score were premenopausal and only 4% were under 40.[16] In MINDACT study, researchers evaluated the 70-gene signature and randomized patients based on clinical and genomic risk. Patients with low clinical and genomic risk did not receive chemotherapy while those with high clinical and genomic risk did. Patients with discordant risk profiles were randomized to determine whether clinical or genomic risk would be used to decide on chemotherapy. Due to limited data and statistical power, it is difficult to draw clear conclusions about whether the small benefit reported with chemotherapy in patients with discordant risk would have been greater in younger women. Only 6.2% of patients in the study were under 40.[17]

In WGS PlanB study, patients with up to three involved LNs and a low Oncotype Dx recurrence score had a good outcome without ACT. However, no subgroup analysis for patients under 40 has been presented.[18]

All patients in WGS ADAPT ER+/HER2 with 0 to 3 involved LN and a low recurrence score (RS) of 0–11 received ET alone (mostly tamoxifen in pre- and aromatase inhibitors (AI) in postmenopausal patients), and those with intermediate RS (12–25) received 3 weeks of ET prior to surgery. Patients whose surgical specimen had Ki67 $\leq$10% were considered endocrine-responders and received ET alone (of whom 23.3% were $\leq$50 years), while those with Ki67 >10% were classified as endocrine nonresponsive and received chemotherapy along with ET (of whom 64.7% were $\leq$50 years). Based on clinical and immunohistochemical (IHC) factors, the ENREP algorithm (https://enrep.info) can help estimate endocrine responsiveness, as derived from the ADAPT data.[19]

The Rx-PONDER study showed that premenopausal women with a recurrence score of 25 or lower and one to three positive LNs who received both chemotherapy and ET had longer invasive disease-free survival (DFS) and distant relapse-free survival than those who received only ET. However, postmenopausal women with similar characteristics did not benefit from ACT.

In conclusion, it may be appropriate to consider omitting ACT in BCY with favorable clinical and pathological features, including low gene expression profiles. However, commercially available genomic assays for HR+ EBC have not been developed to predict which type of ET is most appropriate based on genomic risk. Therefore, these tests should not be used to select the type or duration of ET at this time point. For Asian ethnic women, CanAssist Breast (CAB) is a validated and cost-effective test.[20] This test predicts risk of recurrence using Army Intelligence algorithm by incorporating IHC staining information of five biomarkers (CD44-a stemness marker; pan-Cadherin-cell adhesion, N-Cadherin, and invasion markers; ABCC11 and ABCC4-drug exporters) along with three clinical parameters (tumor size, grade, and node status). CAB classifies patients into low risk or high risk (>15.5) based on recurrence score on a scale of 1 to 100. Despite the fact that CAB uses biomarkers which are different from Oncotype DX, Sengupta et al[21] demonstrated that this test has 83% concordance with Oncotype DX in selecting patients with low risk of recurrence. The cost-effectiveness analysis by Bakre et al[22] shows that with CAB there is a savings of 41% on expenditure incurred due to chemotherapy compared with expenses in the absence of a prognostic test. However, one must be cognizant about the fact that data are more robust for established tests like Oncotype DX or MammaPrint; however, this can be considered as a cost-effective alternate where there are constraints.

Preoperative Endocrine Therapy

Experts generally do not recommend ET alone as (neo) adjuvant for YBC outside of clinical trials.[23] The International Breast Cancer Study Group conducted trials evaluating the efficacy of the gonadotropin-releasing hormone (GnRH) antagonist Degarelix versus the GnRH agonist Triptorelin as a preoperative treatment in premenopausal patients receiving Letrozole. The results showed a partial response rate of 45%, which is comparable to evidence in postmenopausal women.[24] Ovarian function suppression (OFS) was achieved quickly and more effectively with Degarelix than with Triptorelin. This observation may warrant further research to determine if this intervention could improve disease control.

Therefore, experts recommend personalizing therapy based on factors such as early childbirth and co-morbidities. In some cases, patients may not be able to receive chemotherapy due to nononcological conditions such as cardiac or renal dysfunction or hematological disorders. In these cases, hormonal therapy (HT) with OFS may be considered

preoperatively to achieve effective disease control before local therapy.

Adjuvant Endocrine Therapy

Studies that looked at the use of OFS in combination with Tamoxifen or Exemestane in premenopausal women with BC showed that for women at lower risk of relapse, there was no additional benefit to using OFS. However, for women at higher risk of relapse, using OFS with Tamoxifen or Exemestane improved outcomes compared with using Tamoxifen alone.[24,25] According to the SOFT and TEXT data, the experts confirmed that if GnRHa is given in combination with Tamoxifen or an AI, it should be given for 5 years.[26] After 5 years of adjuvant ET, the risk of recurrence continues for over 20 years. Therefore, the recommendation for extending Tamoxifen beyond 5 years in high-risk patients if tolerated is based on the ATLAS and aTTom trials.[27,28] The ASTRRA, randomized phase III study showed that 2 years of adding OFS to Tamoxifen significantly improved the 5-year DFS (3.6% absolute improvement), compared with Tamoxifen alone, and therefore OFS with Tamoxifen should be considered in women with late resumption of ovarian function after chemotherapy, or who remain premenopausal.[29] The use of an AI alone is not recommended in premenopausal women and that caution should be taken when using an AI in premenopausal women who became postmenopausal during treatment due to the potential for recovery of ovarian function.[30] The experts confirmed that hormone levels should be measured at least twice at 3-month intervals to ensure ovarian function is suppressed. Estradiol assays are not standardized and, especially at very low levels of Estradiol, hence gas chromatography/mass spectroscopy method should be preferred to monitor therapy.[31] Based on SIFT-EST sub-study data results, there are concerns about suboptimal OFS with tri-monthly formulations of GnRHa and therefore monthly formulations are preferred in women under 35 years of age and those receiving an AI.[32]

The method of OFS can be surgical or medical and requires balancing the patient's wish for potentially preserving fertility with the need for compliance with frequent injections and cost.[33,34] The possibility of surgical complications of oophorectomy and the side effects of permanent menopause in early age are significant issues from the perspective of survivorship. Cost considerations play a role in India as well as lower adherence and early discontinuation of adjuvant ET in younger patients are associated with lower OS.[35] According to the SOFT/TEXT trial, the rate of early discontinuation was approximately 20%.[26] There are multiple reasons for treatment discontinuation such as side effects, perception of recurrence risk and estimated impact of therapy, social support, patient–doctor relationship, and continuity of follow-up care.[36] Efforts should be made to address these barriers to treatment adherence and motivate patients by emphasizing the real prospects of benefit with continued HT.

GnRH Agonists and Ovarian Function Preservation

The effect of OFS on fertility preservation (FP) varies according to age group and type of chemotherapy regimen and hence at best considered adjunct to established FP measures. As per available data, there is no significant impact on disease outcomes with temporary OFS with GnRHa during chemotherapy.[37] Therefore, the experts confirmed that the use of GnRHa concomitant with (neo-)ACT should be offered to patients who wish to preserve ovarian function only after adequately discussing the possibility of additional toxicity and benefits; however, its use during chemotherapy does not replace established FP methods.

Fertility Preservation for YBC Patients

Fertility becomes an important consideration for survivors of YBC. In a survey conducted in our country, it was found that most practitioners were partly aware of FP options but did not regularly offer them to patients due to concerns about losing time for treatment and patients not being willing at the moment. There is also lack of MDT coordination in this direction. The FP options available in our country are listed in ►**Supplementary Table S2** (online only).

This guideline briefly addresses some of the main concerns related to FP in YBC patients:

- Safety of Controlled Ovarian Stimulation (COS) in NACT candidates: no clear evidence to suggest that COS for oocyte/embryo cryopreservation before NACT causes significant delay in treatment or has detrimental prognostic effect even though the whole process takes around 15 to 20 days.[38] Use of Tamoxifen protocol to prevent high Estradiol levels may be preferred in some cases.[38]
- Ovarian cryopreservation is still not a mainstream method in India and is available at select centers: no case series about pregnancy achieved post-tissue reimplantation. The advantage of the process is no wait time, unlike COS. It should be considered only if the oocyte or embryo freezing is not possible for women $<$36 years.
- BRCA mutation may have a negative impact on women's reproductive potential even before starting therapy. Baseline investigations and extensive counselling are mandatory.[39]
- Interruption of therapy to attempt pregnancy: no optimal cut-off is defined, however in the POSITIVE trial[40] after 2 years of therapy ET was interrupted to allow pregnancy. A washout period of 3 months for ET should be considered for conception. However, the patient and family must be adequately counselled about the pros and cons of therapy interruption and therapy must be resumed after pregnancy and lactation based on the practice in some of the trials. A gap of 12 months is ideal before the end of chemotherapy and conception.[41]

Therefore, increasing awareness about FP amongst the oncology fraternity in India and fertility professionals along with research is the need of the hour so that YBC survivors have a fair chance of fertility later on in life.

Neo/adjuvant Chemotherapy

Although BCY is associated with more unfavorable pathologic features and aggressive biology, age should not be a lone factor to determine the role of NACT/ACT. We have discussed previously the role of gene expression signatures in

identifying patients with HR+ BC who may not need chemotherapy. Notably, in the SOFT and TEXT studies, for patients who did not receive chemotherapy (8 and 21% node positive in each trial, respectively) the 8- and 9-year rate of freedom from BC exceeded 90%, respectively, with similar favorable outcomes in the Austrian Breast and Colorectal Cancer Study Group 12 trial, in which 95% of women did not receive chemotherapy.[26,42] There is a lack of research for BCY patients in investigating different chemotherapy regimens. Experts confirmed that sequential regimens have equal or better efficacy over combination regimens and are also better tolerated in BCY.[43] The indication for dose-dense chemotherapy regimen is independent of age.[44] Both a sequential regimen of Anthracycline-based chemotherapy followed by adequately dosed Cyclophosphamide/Methotrexate/Fluorouracil or weekly paclitaxel and a combination of a Taxane and Cyclophosphamide may be valid alternatives. In the last EBCTCG meta-analysis involving Taxane- or Anthracycline-based regimens, proportional risk reductions were not significantly altered according to age.[45,46] The standard duration of treatment should include four to eight cycles of treatment, as used for older women.

The data from an Indian study strongly indicate need for early detection of triple-negative BC (TNBC) in young patients and augmentation of therapy in addition to standard Taxane and Anthracycline-based chemotherapy in view of overall inferior outcomes.[47–49] The phase III KEYNOTE 522 study compared Pembrolizumab with chemotherapy versus placebo with chemotherapy followed by a year of pembrolizumab or placebo, respectively. The most recently updated data shown benefit of pCR (64.8% vs. 51.2%, p ¼ 0.00055) and for EFS (91.3% vs. 85.3%, hazard ratio [HR]: 0.63, 95% confidence interval [CI]: 0.43–0.93) favoring the pembrolizumab arm.[50] The IMPASSION-031 randomized trial studied NACT with or without atezolizumab followed by a year of atezolizumab or placebo. pCR was superior for the atezolizumab arm, (58% vs. 41%; $p = 0.0044$),139 but outcome data are awaited.[51]

Both the BrighTNess and Indian study by Gupta et al, trials have shown improved pathological CR rates and for patients with TNBC with the addition of Carboplatin.[52,53] Given the over-representation of triple-negative subtypes in these population, young women were well represented in both.[52,53] Data on the introduction of platinum agents in the adjuvant setting is still pending. For patients with TNBC who have not achieved a pCR after standard preoperative regimens, the addition of six to eight cycles of Capecitabine may be considered, as done in other age groups.[54] Subgroup analysis of the CREATE-X trial in TNBC patients having residual disease after NACT suggested adjuvant capecitabine significantly improves survival outcomes in younger patients.[54] The role of 1 year of adjuvant Olaparib in HER2-negative EBC with germline BRCA1/2 mutations which significantly improved invasive DFS (iDFS; 3-year rate, 85.9% vs. 77.1%; HR: 0.58; 99.5% CI: 0.41–0.82; $p < 0.001$) and OS (4-year rate, 89.8% vs. 86.4%; HR: 0.68; 98.5% CI: 0.47–0.97; $p = 0.009$) is additionally relevant to young women.[55]

The addition of 2 years of Abemaciclib can be considered in patients with HR +/HER2-negative, high-risk BC (i.e., those with ≥4 positive LNs, or 1–3 positive LNs with one or more of the following: Grade 3 disease, tumor size ≥5 cm, or a K_i-67 score of ≥20%).[56] The recently published NATALEE trial demonstrated that patients who received ET plus ribociclib had an improvement in iDFS compared with ET alone (HR: 0. 748; 95% CI: 0.618–0.906; $p = 0.0014$).[57]

Adjuvant Anti-HER-2 Therapy

Compared with older women, HER2+ YBC have comparable outcomes when controlling for other known prognostic factors. YBC also derive equivalent benefits from adjuvant Trastuzumab.[4] Thus, YBC with node-negative HER2+ and tumors size <2 cm may be effectively treated with the de-escalated regimen of adjuvant weekly Paclitaxel with Trastuzumab for 12 weeks followed by 9 months of Trastuzumab, which has demonstrated excellent long-term DFS and OS.[58] In addition, lower rates of chemotherapy-related amenorrhea was observed in this study compared with standard alkylator-based chemotherapy regimens (only 9% of women age ≤40 reporting prolonged chemotherapy-related amenorrhea).[58] Additionally alternative Taxanes (i.e., Docetaxel, Paclitaxel, Albumin-bound paclitaxel) may be substituted for selected patients due to medical necessity like hypersensitivity reaction. If substituted for weekly paclitaxel or docetaxel, then the weekly dose of albumin-bound paclitaxel should not exceed 125 mg/m^2. NACT combined with HER2-directed therapy is preferred for young women with larger and/or node-positive HER2-positive tumors. Subcutaneous formulations of Trastuzumab (Hyaluronidase-oysk the subcutaneous formulation) and Trastuzumab plus Pertuzumab have demonstrated similar pCR rates as the intravenous formulations of these therapies when combined with chemotherapy in the neoadjuvant setting may be particularly attractive for young women who need to fit BC treatment into complex personal and professional commitments.[59,60] Pertuzumab, Trastuzumab, and Hyaluronidase-zzxf injection for subcutaneous use may be substituted anywhere that the combination of intravenous Pertuzumab and intravenous Trastuzumab are given as part of systemic therapy. In addition, all these three subcutaneous injections have different dosing and administration instructions compared with the intravenous products. In young women with residual disease after NACT, adjuvant T-DM1 (Ado-Trastuzumab emtansine) was associated with superior 3-year iDFS compared with Trastuzumab among the 296 patients <40 years enrolled in the KATHERINE trial (86.5% vs. 74.9%; HR: 0.50; 95% CI: 0.29–0.86).[61] Martin et al demonstrated benefit of Neratinib for high-risk HER2+ patients when given for a year after completion of 1 year of Trastuzumab. In addition, a significant benefit was seen in the HR+ subgroup. Most common side effect of Neratinib like diarrhea should be managed prophylactically.[62]

There is no evidence of the role of Neratinib after 1 year of adjuvant Trastuzumab and Pertuzumab or after post-adjuvant TDM1. Hence experts agreed on discussion on Neratinib if available, as in other age groups, in patients at high risk of relapse (e.g., node +, HR +); the increased toxicity needs to be clearly communicated to patients (►**Supplementary Table S1** [online only]).

Scalp cooling devices can be considered in patients receiving Anthracyclines or Taxanes to reduce the incidence of chemotherapy-induced alopecia and superior hair regrowth.[63]

Adjuvant Bisphosphonates

Six monthly adjuvant bisphosphonates can be considered for young females receiving OFS with HT. A recent case–control study has also shown that there are no major teratogenic effects of bisphosphonate exposure on pregnant females except for increased rates of neonatal complications and spontaneous abortions.[64]

Side-Effects of Adjuvant Therapy

In view of long-life expectancy, the experts reinforce the careful surveillance for possible long-term toxicities of adjuvant treatment (e.g., secondary cancers, cardiovascular toxicity, irreversible ovarian failure, weight gain, cognitive functions, and bone health).

Advanced Breast Cancer Loco-regional Relapse

Treatment of locoregional relapse is same as in older women. The primary treatment of an in- breast-tumor recurrence is a completion mastectomy in case of previous BCS and wide excision of chest wall recurrence with clear margins (is required chest wall resection) in case of a post-mastectomy recurrence. Further adjuvant therapy is warranted in the form of ET for HR+ cancers and chemotherapy/targeted therapy for HR– and HER2+ cancers.[65]

Special Situations

Inflammatory Breast Cancer

IBC is rare subtype of LABC with a poor prognosis. It is characterized by diffuse erythema and edema occupying at least one-third of the breast, with or without an underlying mass with a history of fewer than 6 months and pathological diagnosis of IDC. High index of suspicion is required to diagnose these cases in young women as the features may mimic infectious mastitis and breast abscess. The MDT approach is critical in the care of patients with IBC[66] and all eligible patients should be enrolled in clinical trials, given the rarity of the disease. The treatment of nonmetastatic IBC is similar to nonmetastatic noninflammatory LABC, which includes NACT, followed by loco-regional treatment. The only difference is SLNB and BCS should not be preferred in IBC even with a very good response to NACT. The experts confirmed that women who have achieved a partial response to NACT should undergo modified radical mastectomy with axillary dissection and post-mastectomy radiation. Immediate reconstruction following surgery should be avoided as IBC is associated with poor prognosis and a high risk of early recurrence.[65] About one-third of patients with IBC are metastatic at diagnosis and should be managed as per older BC patients. Radiotherapy can be used to palliate inoperable IBC.

BRCA Mutation Carriers

Experts confirmed that the decision regarding therapeutic mastectomy when BCS is feasible and contralateral prophylactic mastectomy depends on multiple factors (e.g., patient age, disease stage, previous breast biopsies, genetic predisposition or family history of BC, fear of recurrence, and concern with cosmetic symmetry).[67] Advancement in modern MDT has led to a reduction in the incidence of contralateral BC from approximately 0.6% to 0.2–0.5% per year.[68] Improvement in survival with contralateral prophylactic mastectomy is still variable in available data.[68,69] Therefore, the experts reinforced MDT and individualized approach in such cases. For a high-risk young patient, MRI breast is preferred for surveillance whenever available.[70] There is no definitive evidence of improvement in survival by risk reducing salpingo-oophorectomy (RRSO). Timing and indications of RRSO for BRCA1/2 mutated and other highly penetrant mutations should follow available international/national guidelines. Salpingectomy (removal of the fallopian tubes) alone is not the standard of care; clinical trials are ongoing. The experts recommended that standard prognostic factors should be followed to decide about treatment in early disease as there are still no definitive conclusions on the best chemotherapy regimen for BRCA-associated BC patients in the neo/adjuvant setting. Based on TNT trial, the superiority of a platinum agent, compared with Taxanes, was confirmed in the ABC setting for BRCA-associated TNBC.[71] And the Olympia trial has established the role of adjuvant Olaparib for 1 year after curative treatment in BRCA-mutated BC patients as mentioned earlier.[52] The superiority of Olaparib including a superior RR and progression-free survival with a more favorable toxicity profile was demonstrated in the OlympiAD study with OS benefit of 7.9 months (22.6 vs. 14.7) amongst patients who had not received prior chemotherapy in the metastatic setting.[72] The EMBRACA study a with similar design proved the superiority of Talazoparib.[73] A somatic BRCA1/2 pathogenic gene variants in breast tumors can be found in a small proportion of patients not harboring germline mutations.[74] But at present, the clinical utility and therapeutic usage of these mutations in BC are not well established and are the subject of ongoing research. Therefore, somatic BRCA1/2 testing should not be used as an alternative to germline testing.

Young Male Breast Cancer

About 1% of all BCs occurs in males.[75] Young male BC is a disease of the elderly. But in India, the data available have shown that male BC is more frequently found in the younger age groups. According to National Cancer Institute's Surveillance, Epidemiology, and End Results Database,[76] more than 90% of the young male BCs are ER+. Similar results also have been shown by an Indian study with an ER/PR positivity rate of around 80%.[75] According to various Indian studies, young male BC is diagnosed more commonly at the advanced stage.[75] Experts recommend routine management of young male BC in accordance with international recommendations/guidelines. Experts also suggest to include young male BC early as well as advance in clinical trials.

Pregnancy-Associated Breast Cancer

BC diagnosed during pregnancy (BCP) or postpartum is known as pregnancy-associated BC (PABC).[77] BCP management needs MDT and precision care. Treatment depends

upon disease stage, receptor status, gestational age, and performance status.[77–81] Diagnostic delays are common, and reduction of such delays requires clinical and self-examination of the breast and obstetrician's awareness of examining breast lumps during pregnancy. [81] Chest X-rays with abdominal shielding, abdominal and pelvic USG, and non-contrast skeletal MRI have been recommended for staging studies.[80,81] Histopathology is recommended to confirm a diagnosis with receptor status which carries therapeutic and prognostic importance. Experts recommended BCP management as per standard BC management, with careful consideration of the trimester of pregnancy, maternal and fetal safety.[79,82] Termination of pregnancy generally does not improve outcomes and is not recommended unless there is a pressing obstetric and/or oncological reason. Outcomes of treatment are variable, but disease stage and biology-matched outcomes are comparable to age-matched nonpregnant BC in several studies, including in the first Indian gestational registry in which a 7-year follow-up data in a cohort of 104 PABC cases had shown comparable oncological and obstetrical outcomes.[77] Premature birth has emerged as an important negative predictor of cognitive development, thus avoiding iatrogenic preterm birth is recommended unless there is a compelling obstetric reason. Pregnancy after BC can also be considered in women with HR and/or BRCA mutation-positive disease under trained oncology care. Patients on ongoing systemic therapy should not breastfeed. Other women can breastfeed and should seek appropriate professional care.[83]

Neuroendocrine Neoplasms of the Breast in Young Women

The recent World Health Organization Classification 2019 unified the neuroendocrine neoplasm (NEN) of the breast as those in which >90% of tumor cells demonstrate neuroendocrine features. NENs are a heterogeneous group and were further classified as neuroendocrine tumors (NETs) if well differentiated and as neuroendocrine carcinomas of the breast (NECB) when poorly differentiated. NECBs are further subdivided into small and large cell carcinomas. Those with <90% neuroendocrine differentiation is classified as invasive breast carcinoma of no special type (IBCs-NST) with neuroendocrine differentiation.[84]

Most of NECB patients are ER and/or PR positive, implying that NECB is part of the luminal-like type.[84]

The most common clinical features of NECB are similar to those of invasive breast carcinoma of no special type (IBC-NST). Compared with IDC of no special type, NECB is more likely to present with systemic metastasis at diagnosis. The radiologic characteristics of NECB are not specific. Due to rarity, as of now, there is a lack of high-quality guidelines or clear consensus for these NECBs, and evidence is sparse based on case reports and retrospective studies. However, at best, chemotherapy agents can be selected based on the histopathological characteristics of NECB. In general, poorly differentiated, small-cell NECs or large-cell NECs are treated with platinum/etoposide-containing regimens and other types of NECB with Taxane-based and/or Anthracycline chemotherapy. Although these tumors are known to express hormone and HER2 receptors, there is limited literature on the response of these tumors to endocrine and anti-HER2 therapy.[85]

Operable tumors should be resected first as per the standard surgical options in IBCs-NST as there is limited evidence regarding NACT in NECB. Patients with a large tumor size (>5 cm) with a strong desire to preserve the breast, locally advanced NECB, or inoperable NECB may receive NACT.[85]

Goserelin and Letrozole can be considered in situations where a patient with a strong desire to conserve breast with contraindications/refusal for chemotherapy under close observation after multidisciplinary joint clinic discussion. In addition, Palbociclib and other cyclin-dependent kinases (CDK) 4/6 inhibitors combined with Fulvestrant may be considered in patients with high-grade NECB who are resistant to platinum-based chemotherapy and HT.[85,86]

NETs Gr 1 and 2 are treated with somatostatin receptor analogs. There are case reports of response to Lutetium peptide receptor radiotherapy in NEBC.

RT and surgery are indicated as per the standard options in IBCs-NST. As there is no specific recommendation for NEBC.[84]

Long-term follow-up is recommended as NECBs may metastasize even years after treatment of the primary tumor.[87]

Supportive and Follow-Up Care

Expert panel confirmed that follow-up and supportive care in young women should follow the same guidelines as in older women. It should be emphasized that BC care nurses and other supportive care staff can play a critical role in providing survivorship care, and support for young patients and their families. The panel also reiterated that standardized patient-reported outcome measurements may allow timely collection of treatment side effects, preparing the development of targeted interventions. Electronic devices as well as online applications are convenient and efficient tools for gathering information from patients to allow real-time integration of patient-reported outcome data in the electronic medical record and earlier interventions by the health care team.[88]

Psychosocial Issues

Experts confirmed that psychosocial issues should be regularly addressed during routine treatment as well as during follow-up involving patients and family members in the early course of treatment. In addition to social issues like a return to work, financial loss, and psychosocial issues, FP, contraception, premature menopause, sexual functioning, pregnancy after BC, bone health, cognitive impairment, and lifestyle changes are to be addressed. There is a great need for dedicated research/clinical trials to address these concerns of YBC. As of now, the multidisciplinary approach remains the backbone of care to ensure a holistic and comprehensive management planning.

Conflict of Interest
None declared.

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