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Breast Cancer Management in the Radiotherapy Department of Mali Hôpital

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Abstract **Original Research Article**

The aim of our study was to evaluate the clinical, diagnostic and therapeutic aspects of breast cancers followed up in the radiotherapy department of Hôpital du Mali Methods: All breast cancer patients managed in the radiotherapy department of Hôpital du Mali were selected from January 1, 2016 to December 31, 2018 during a retrospective study. The variables studied were socio-demographic aspects, family and personal history, clinical and paraclinical features (anatomopathological examination, histopathological grade, immunohistochemistry, TNM classification of breast cancer, 6th edition 2002), therapeutic modalities. Surgery was performed in 65 patients (100%). Radical surgery was performed in 62 patients (94.3%), but conservative surgery in 5.6%. Of these, 69.4% had received adjuvant chemotherapy and 30.7% neoadjuvant chemotherapy. Radiotherapy was adjuvant in 65 patients (100%). Hormone therapy was initiated in 23.07% of our patients. After an average follow-up of 36 months, 30 patients were in complete remission. The overall survival rate at three years was 50.7%. ***Discussion and Conclusion***: The three-year survival rate was 50.7% in our series. This rate can be improved by early diagnosis and prompt, appropriate management.
Keywords: Breast cancer, surgery, chemotherapy, radiotherapy, hormone therapy.

INTRODUCTION

Breast cancer is the world's leading cancer, accounting for more than 11.7% of all cancers [1, 2]. In 2022, there will be 2.3 million cases and 670,000 deaths from breast cancer worldwide. The incidence of breast cancer increases with age. In sub-Saharan Africa, 129,000 women were newly diagnosed in 2020 [3-5]. In high-income countries, this cancer has a good prognosis, but in sub-Saharan Africa, the survival rate is considerably lower, with a five-year survival of just under 50%. In Mali, diagnosis is made late, but the number of breast cancers is largely underestimated. In 2020, it was estimated at 2,448 new cases, or 17.3%, with 1,425 deaths, or 13.9% [6]. The prognosis for breast cancer in Mali is poor. Treatment of breast cancer depends on the stage of the disease, the biological and clinical characteristics of the tumour, and the age and state of health of the patient. In the early stages (localized, non-metastatic cancer), treatment is aimed at curing the disease, and may combine all therapeutic modalities to reduce the risk of local and distant recurrence. Locoregional treatment combines surgery and radiotherapy. Systemic treatments reduce the risk of metastatic recurrence [7, 8]. Given the increasing incidence of breast cancer in Mali, the present study was initiated with the aim of describing the clinical, diagnostic and therapeutic aspects of breast cancer in our context.

MATERIALS AND METHODS

This was a retrospective descriptive study, running from January 2016 to December 2018 in the radiotherapy department of Mali Hospital. Patients with histologically proven breast cancer were included. Exhaustive sampling of all breast cancer cases during the study period was performed. Patients with breast abnormalities without cytological and/or histological confirmation of malignancy were excluded. The variables studied were age, profession, history, parity, stage of disease according to the TNM classification of the International Union Against Cancer (UICC) and the

American Joint Committee on Cancer (AJCC), 7th edition.

RESULTS

The study involved 65 patients. The mean age was 44 years, with extremes of 25 and 88 years. The age range (35-44) was the most represented with 35.4%. The majority of our patients (n = 45) (69.2%) were genitally active at the time of diagnosis (see Table I). Five patients (7.7%) had a family history of breast cancer. Forty patients (61.53%) were multiparous.

Table I: Distribution of patients by socio-demographic characteristics

Socio-demographic characteristics	Number (n)	Proportion (%)
Age range (years)		
25 - 34	14	21,54
35 - 44	23	35,38
45 - 54	22	33,84
54 et plus	6	9,24
Marital status		
Single	13	20
Married	38	58,47
Divorced	10	15,38
Widowed	4	6,15
Profession		
Housewife	35	53,85
Shopkeeper	15	23,07
Nurse	03	4,62
Other	12	18,46
Menopausal		
Yes	22	33,84
No	43	66,16
Parity		
Nulliparous	0	0
Primiparous	10	15,40
Multiparous	40	61,53
Large Multipart	15	23,07

Forty patients (61.52%) had undergone mastectomy plus axillary curage (see Table II).

Table II: Distribution of patients by reason for radiotherapy consultation

Motif de consultation	Number	Percentage %
After mastectomy more axillary curage	40	61,52
After conservative surgery	3	4,62
Breast mass	15	23,08
Inflammatory tumor	7	10,78
Total	65	100

Thirty-four patients (52.3%) had their tumours located in the right breast, and 31 (47.7%) in the left. Thirty patients (46.15%) had the tumour in the superior-external quadrant (SEQ) of the breast (right or left), and 15 (23.07%) in the superior-internal quadrant (SIP) of the breast (right or left).

The majority of patients (n=40 cases, 61.53%) had a tumour size of between 5 and 10 cm (see Table III).

Table III: Distribution of patients by tumor size at diagnosis

Tumor size	Number	Percentage %
< 5 cm	15	23,07
5 - 10 cm	40	61,53
> 10 cm	10	15,40
Total	65	100

Mammography was performed in 92.3% of cases (n = 60), with 15 patients (23.10%) having an ACR 3 lesion, and 40 patients (61.53%) an ACR 4 lesion. The lesion was classified ACR 5 in 10 patients (15.37%). On

pathological examination, 62 patients (95.38%) had non-specific infiltrating carcinomas, and 2 had infiltrating lobular carcinomas. All patients (100%) underwent extension work-up. Patients were classified according to the TNM classification of the International Union Against Cancer (UICC) and the American Joint Committee on Cancer (AJCC), 7th edition. Mastectomy associated with axillary curage (MCA) was performed in 63 patients (96.92%), 3 patients had undergone lumpectomy associated with axillary curage. In our series, 69.24% (n=45/65) of patients received adjuvant chemotherapy versus 30.76% (n=20/65) who received neoadjuvant chemotherapy. The most frequent protocols were Adriblastine and Cyclophosphamide (AC: 61.53%; n=40/65), Taxanes (23.07%; n=15/65), followed by 5 Fluoro-Uracile, Adriblastine and Cyclophosphamide (FAC: 15.38%; n=10/65). Hormone therapy was received by 23.07% (n=15/65) of patients. 7.69% (n=5/65) of patients received adjuvant targeted therapy.

Paramètres	Effectif (n)	(Proportion %)
Traitement chirurgical		
Conservateur + curage axillaire	3	5,67
Radical + curage axillaire	62	94,33
Chimiothérapie		
Néo - Adjuvante	20	30,76
Adjuvante	45	69,24
Radiothérapie		
Oui	65	100
Non	0	0
Hormonothérapie		
Oui	15	23,07
Non	50	76,93
Thérapie ciblée		
Oui	05	7,70
Non	60	92,30

After 36 months, 35 patients (53.84%) were in complete remission, 10 patients (15.38%) were continuing to progress and 20 patients (30.76%) were lost to follow-up.

DISCUSSION

In our series, the mean age of patients was 44 years. This result is similar to those reported by some African authors [9-11]. Married women accounted for 58.47% of cases. This result is similar to those reported by some African authors [12-14], but lower than the 81.6% observed by Diakité *et al*., in Mali [15-17]. The majority of patients were housewives (53.85%). This result is lower than that noted by Bissam [17], who found a prevalence of 90% among housewives, but superposable with those reported by certain African authors [11, 12, 18], who found a prevalence of 90% among housewives. In our series, menopausal patients accounted for 33.84% of cases, and those in the genitally active period for 66.16%. This result is close to those observed by some sub-Saharan African authors [10, 11, 13], but lower than the 68.7% observed by Wail *et al*., in Morocco.

Multiparous women were the most affected, with a frequency of 61.53%. Various authors have reported similar results [19-22]. In our series, the right breast was the most affected in 52.3% of cases. This result differs from those of Mbala NL *et al*., [14], Ben Amed *et al*., [23] and Thiam *et al*., [21], who found a predominance of left-breast involvement. On the other hand, other studies found a predominance of the right breast [18, 22], in the order of 45-55%. The upper-outer quadrant was the most affected, accounting for 46.15% of cases. This result is close to that observed by Diakité [16], but higher than the 38.4% of Mbala Nl *et al*., [14], and lower than the 68.7% observed by Zacharie *et al*., [17]. According to several authors, the left breast and the superolateral quadrant are more affected, as they are generally more vascularized. This vascularization favours more rapid tumour development [17]. Most patients (76.93%) had undergone consultation at a very advanced stage (III and IV). Non-specific infiltrating carcinoma was the most frequent histological type, accounting for 95.38% of all cases. Studies reported by H. Bakkali [19] and some Africans [18, 20-22] had the same result, with a frequency ranging from 85 to 96%. Immunohistochemical analysis was carried out in only twenty-five patients, i.e. 38.47%. It revealed that 23.07% of tumours were rich in hormone receptors and 15.4% were triple-negative. This low rate of immunohistochemistry is explained by our patients' financial difficulties, due to the high cost of immunohistochemical analysis in our context. In our study, 100% of our patients received either neoadjuvant or adjuvant chemotherapy. Moreover, targeted therapy was still unaffordable for most women during the study period. Only 7.69% (n=5/65) of patients received adjuvant trastuzumab.

Mastectomy associated with axillary curage (MCA) was performed in 95.4%. Our frequency of

mastectomy was higher than that of some sub-Saharan and North African authors [22-24], who found a proportion of 60 to 66%. Diène [11] found that 88.9% underwent quadrantectomy and only 4.6% had lumpectomy associated with axillary curage. In our study, radiotherapy was performed on 65 patients (100% of those operated on). Overall survival at 36 months was 50.7%, and twenty patients (30.8%) were lost to follow-up. This result is similar to those of Arkoob [2] and Diène [11], who found five-year overall survival rates of 59.3% and 66% respectively. As for Togo [25], five-year survival was 37.1%. Survival at 36 months was poor, reflecting the late diagnosis: the majority of patients (77.8%) were diagnosed at stage T4. Recurrence (resumption or reappearance of cancer from cells not destroyed by the initial treatment) has a poor prognosis, especially when it occurs within two years of the end of treatment. In our setting, where patients are diagnosed at a locally advanced stage, the risk of parietal recurrence remains high. Recurrence after radiotherapy was noted in 02 patients (3.1%). The 2 cases of recurrence were parietal and axillary.

CONCLUSION

The results of our study confirm the data in the literature concerning the epidemiological, clinical, therapeutic and evolutionary characteristics of breast cancer and the reserved prognosis of female breast cancer in sub-Saharan Africa. Appropriate, rapid and multidisciplinary treatment is therefore essential to improve prognosis. Treatments are increasingly individualized and adapted to each type of cancer and each patient. Management will continue to evolve towards de-escalation of both surgery and radiotherapy, and towards systemic treatments better adapted to each patient's risk of recurrence.

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REFERENCES

1. Ferlay, J., Colombet, M., Soerjomataram, I., Mathers, C., Parkin, D. M., Piñeros, M., ... & Bray, F. (2019). Estimating the global cancer incidence and mortality in 2018: GLOBOCAN sources and methods. *International journal of cancer*, *144*(8), 1941-1953.
2. Arkoob, K., Al Nsour, M., Al Nemry, O., & Al Hajawi, B. (2010). Epidemiology of breast cancer in women in Jordan: patient characteristics and survival analysis. *EMHJ-Eastern Mediterranean Health Journal, 16 (10), 1032-1038, 2010.*
3. Raiah, M., Terki, K., Benrabah, L., Ammour, F., & Lounis, A. (2022). Cancer epidemiology in Algeria, 1996-2019. *Bulletin du Cancer*, *109*(9), 909-915.
4. Bray, F., Ferlay, J., Soerjomataram, I., Siegel, R. L., Torre, L. A., & Jemal, A. (2018). Statistiques mondiales sur le cancer 2018: Estimations GLOBOCAN de l'incidence et de la mortalité dans le monde pour 36 cancers dans 185 pays. *CA Cancer J Clin*, *68*, 394-424.
5. Azouaoui, K., & Ben Sidhoum, A. (2021). Synthèse bibliographique sur le cancer du sein [Internet] [PhD Thesis]. Université Mouloud Mammeri; [cité 8 avr 2024]. Disponible sur: https://dspace.ummto.dz/items/894466fd-2056-49d0-aad1-2b2e4eb49388
6. Statistiques mondiales sur le cancer 2018: Estimations GLOBOCAN de l'incidence et de la mortalité dans le monde pour 36 cancers dans 185 pays.
7. OMS, Organisation mondiale de la santé. Cancer du sein: prévention et lutte contre la maladie. [En ligne]. http://www.who.int/cancer/events/breast_cancer_month/fr/.
8. Touré, P. **(**2000). Bilan de la prise en charge des cancers du sein chez la femme. Expérience sur 10 ans présenté à l'Institut Curie de Dakar de l'Université Cheick Anta Diop le 18 juin 2000.
9. El Mhabrech, H., Neji, H., Stita, W., Mallat, N., Aissa, A., Chabchoub, I., ... & Alouini, R. (2014). Le cancer du sein chez l'homme: similaire ou différent à celui de la femme. *Feuillets de radiologie*, *54*(4), 229-232.
10. Diallo, M. S., Diallo, T. S., & Diallo, S. B. (1996). Les tumeurs du sein : épidémiologie, clinique, anatomo-pathologie et pronostic. *Med Afr Noire*, *43*(5), 298-301.
11. Diène, P. M. (2011). Traitement conservateur dans les cancers du sein. Thèse Méd. Dakar: Université Cheikh Anta Diop, 125.
12. Zongo, N., Bagre, S. C., Bagué, A. H., Ouangre, E., Zida, M., Bambara, A., ... & Traoré, S. S. (2015). Place de la chirurgie dans la prise en charge des cancers du sein chez la femme au Centre Hospitalier Universitaire Yalgado Ouedraogo: à propos de 81 cas. *Pan African Medical Journal*, *22*(1), 117. Doi: 10.11604/pamj.2015.22.117.6929.
13. Toure, M., Nguessan, E., Bambara, A. T., Kouassi, Y. K. K., Dia, J. M. L., & Adoubi, I. (2013). Facteurs liés au diagnostic tardif des cancers du sein en Afrique-sub-saharienne: cas de la Côte d'Ivoire. *Gynécologie Obstétrique &*

Fertilité, *41*(12), 696-700. doi: 10.1016/j.gyobfe.2013.08.019.

14. Mbala, N. l., & Mbanzulu, P. (2010). Profil clinique, histopathologique et moléculaire du cancer mammaire chez la femme congolaise de Kinshasa, 2010. Thèse de doctorat, Faculté de médecine, Unikin.
15. Lamine, I. (2005). Traoré, Le cancer du sein dans le service de chirurgie « A » de l'hôpital national du point « G »: aspects cliniques et thérapeutiques, Thèse de doctorat, faculté de médecine, université de Bamako.
16. Diakite, N., Sanogo, Z. Z., & Traore Cheick, B. (2011). Sékou Koumare, cancer du sein: aspects cliniques et thérapeutiques dans le service chirurgie << A>> du CHU du point G, 2011, thèse de doctorat, faculté de médecine, université de Bamako.
17. Bissan, M., Sangare, E. D., & Sanogo, Z. Z. (2007). Cancer du sein: aspects cliniques et thérapeutiques dans le service de chirurgie << A>> du CHU du pont G, Thèse de doctorat, faculté de médecine, université de Bamako.
18. Togo, A., Traoré, A., Traoré, C., Dembélé, B. T., Kanté, L., Diakité, I., ... & Diallo, G. (2010). Cancer du sein dans deux centres hospitaliers de Bamako (Mali): aspects diagnostiques et thérapeutiques. *Journal africain du cancer/African Journal of Cancer*, *2*(2), 88-91.
19. Bakkali, H., Marchal, C., Lesur-Schwander, A., & Verhaeghe, J. L. (2003). Le cancer du sein chez la femme de 30 ans et moins. *Cancer/radiothérapie*, *7*(3), 153-159.
20. Lerebours, F. (2006). Traitement néoadjuvant du cancer du sein: marqueurs géno- et phénotypiques de la réponse thérapeutique et du pronostic. *Pathol Biol*, *54*(4), 209-214.
21. Thiam, D. (2002). Cancer du sein étude clinique dans le service de gynéco obstétrique de l'Hôpital national du point « G »: à propos de 43 cas, Thèse de doctorat, faculté de médecine, université de Bamako.
22. Sando, Z., Fouogue, J. T., Fouelifack, F. Y., Fouedjio, J. H., Mboudou, E. T., & Essame, J. L. O. (2014). Profil des cancers gynécologiques et mammaires à Yaoundé-Cameroun. *Pan African Medical Journal*, *17*(1).
23. Ahmed, S. B., Aloulou, S., Bibi, M., Landolsi, A., Nouira, M., Fatma, L. B., ... & Kraïem, C. (2002). Pronostic du cancer du sein chez les femmes tunisiennes: analyse d'une série hospitalière de 729 patientes. *Santé publique*, (3), 231-241.
24. Bouzoubaa, W., Laadioui, M., Jayi, S., Alaoui, F. Z. F., Bouguern, H., Chaara, H., & Melhou, M. A. (2015). Oncoplastie avec conservation mammaire dans le traitement du cancer du sein: à propos de 16 cas. *Pan African Medical Journal*, *20*(1), 180. doi:10.11604/pamj.2015.20.180.4897.
25. Togo, A., Traoré, A., Traoré, C., Dembélé, B. T., Kanté, L., Diakité, I., ... & Diallo, G. (2010). Cancer du sein dans deux centres hospitaliers de Bamako (Mali): aspects diagnostiques et thérapeutiques. *Journal africain du cancer/African Journal of Cancer*, *2*(2), 88-91.