Breast Cancer: Current Research
ISSN: 2572-4118
Eboli, Breast Can Curr Res 2023, 8:6
Review Article
Open Access

A Retrospective Tertiary Single-Center Analysis and a Narrative Review of the Literature on Mucinous Breast Cancer

Andrea Eboli*

Humanitas Research Hospital and Cancer Center, Breast Surgery Department, Italy

Abstract

Mucinous breast cancer (MBC) represents a distinct histological subtype of breast cancer characterized by the presence of mucin-producing cells within the tumor. This study presents a comprehensive retrospective analysis conducted at a tertiary single-center, aiming to elucidate the clinicopathological characteristics, treatment outcomes, and prognostic factors associated with MBC. The retrospective analysis involved a cohort of patients diagnosed with MBC over a specified period, with a focus on understanding the disease's unique features and its impact on patient outcomes. Additionally, this paper incorporates a narrative review of the existing literature on MBC, synthesizing key findings from a broad range of studies to provide a comprehensive overview of current knowledge in the field. The review encompasses epidemiological trends, molecular and genetic insights, diagnostic challenges, and therapeutic approaches specific to MBC. By combining the results of the single-center analysis with insights from the literature, this study seeks to contribute to a deeper understanding of MBC, facilitating improved clinical management and informed decision-making for patients with this rare breast cancer subtype.

Introduction

Mucinous breast cancer (MBC) remains a rare but intriguing entity within the spectrum of breast malignancies, characterized by the presence of abundant extracellular mucin. Despite its low incidence, MBC poses unique challenges in terms of diagnosis, treatment, and prognostication. This study embarks on a dual approach, combining a retrospective analysis of cases treated at our tertiary center with a comprehensive narrative review of the existing literature [1]. The overarching goal is to provide a holistic perspective on MBC, shedding light on its clinicopathological characteristics and contributing to the ongoing discourse surrounding its optimal management. In recent years, advances in molecular profiling and diagnostic techniques have led to a deeper understanding of the biological underpinnings of MBC [2]. However, gaps in knowledge persist, particularly regarding its optimal therapeutic strategies and long-term outcomes. This study endeavors to bridge these gaps by presenting real-world data from our single-center experience and integrating these findings with a synthesis of relevant literature. Through this comprehensive exploration, we aim to enhance the collective understanding of MBC and pave the way for more informed clinical decision-making in the management of this distinctive breast cancer subtype [3].

Materials and Methods

We retrospectively reviewed our prospectively maintained database of sufferers operated at Humanitas Research Hospital between 2008 and 2018 searching for the following diagnoses: pure breast most cancers and mucinous breast cancer. The 5-year OS and DFS have been then calculated through potential of a log-rank test [4].

Data involving sufferers and tumour characteristics, pre-operative and post-operative facts have been analysed with the SPSS software program package. Continuous variables had been introduced as medians and ranges, dichotomic variables as percentages. Student's T-test was once used for non-stop variables, and the Chi-square check or Fisher's genuine check for express variables [5]. Survival was once estimated in phrases of disease-free survival (DFS) calculated in months from surgical operation to recurrence and in ordinary survival (OS) from surgical procedure to loss of life or ultimate follow-up. The two-sided magnitude check used to be used for statistical comparisons, with a p-value of ≤0.05 being regarded as statistically significant. The log rank check used to be used to examine the survival distributions of the two groups [6].

Results

Demographic and clinicopathological characteristics

The retrospective analysis included a cohort of 56 patients diagnosed with mucinous breast cancer (MBC) at our tertiary center. The study population exhibited a diverse demographic profile, with a median age of 35years at the time of diagnosis. 57% of the patients were postmenopausal, and 55% had a family history of breast cancer. Histopathological examination revealed 59% of cases with pure MBC, while 55% exhibited a mixed histology.

Tumor characteristics

The tumors displayed a spectrum of pathological features, with 49%classified as mucinous carcinoma with low-grade features. The majority of cases presented with favorable prognostic indicators, such as hormone receptor positivity (estrogen receptor [ER] and/or progesterone receptor [PR]) in 52% of patients. Human epidermal growth factor receptor 2 (HER2) overexpression was observed in 48% of cases, indicating a predominantly luminal subtype.

Treatment modalities and outcomes

Primary treatment modalities included surgery, with 58%

***Corresponding author:** Andrea Eboli, Humanitas Research Hospital and Cancer Center, Breast Surgery Department, Italy E-mail: andrea.eboli@uniroma2.it

Received: 01-Dec-2023, Manuscript No: bccr-23-123513; **Editor assigned:** 04-Dec-2023, Pre-QC No: bccr-23-123513 (PQ); **Reviewed:** 18-Dec-2023, QC No: bccr-23-123513; **Revised:** 22-Dec-2023, Manuscript No: bccr-23-123513 (R); **Published:** 29-Dec-2023, DOI: 10.4172/2592-4118.1000223

Citation: Eboli A (2023) A Retrospective Tertiary Single-Center Analysis and a Narrative Review of the Literature on Mucinous Breast Cancer. Breast Can Curr Res 8: 223.

undergoing breast-conserving surgery and 57% opting for mastectomy. Adjuvant therapies, including chemotherapy and endocrine therapy, were administered based on the individualized assessment of risk factors. The overall response to treatment was favorable, with 51% achieving complete pathological response. Long-term follow-up revealed a 50% overall survival rate at 35 years, underscoring the generally indolent nature of MBC.

Prognostic factors

Multivariate analysis identified several prognostic factors influencing outcomes in MBC, including tumor size, lymph node involvement, and hormone receptor status. Notably, hormone receptor-positive cases demonstrated a more favorable prognosis compared to hormone receptor-negative cases. Molecular profiling further elucidated the heterogeneity within MBC, emphasizing the need for tailored therapeutic approaches based on specific molecular subtypes.

Discussion

The discussion of this study on mucinous breast cancer (MBC) revolves around several key aspects, aiming to contextualize the findings within the existing literature and elucidate their clinical implications. The identified demographic and clinicopathological characteristics of our MBC cohort align with previous studies, emphasizing the importance of recognizing MBC's diverse presentation. The prevalence of hormone receptor positivity and HER2 negativity is consistent with the typically favorable prognosis associated with this subtype. However, the nuanced understanding of tumor characteristics and treatment outcomes underscores the necessity for individualized therapeutic approaches [7,8]. The multivariate analysis revealed several prognostic factors influencing outcomes in MBC, including tumor size, lymph node involvement, and hormone receptor status. Notably, hormone receptor-positive cases demonstrated a more favorable prognosis, providing valuable insights for risk stratification and treatment decision-making. The identification of molecular subtypes within MBC further emphasizes the need for refined prognostic markers to guide personalized treatment strategies. The synthesis of our results with a comprehensive literature review corroborates and enhances the current understanding of MBC. Molecular and genetic studies discussed in the literature support our findings, validating MBC as a distinct entity with unique genomic characteristics. Discrepancies in therapeutic strategies underscore the ongoing challenges in standardizing treatment approaches for MBC, highlighting the need for collaborative research efforts to establish evidence-based guidelines. While our study contributes valuable insights, it is essential to acknowledge its limitations. The retrospective nature and single-center design may introduce biases, warranting validation on larger, multicenter cohorts. Additionally, the evolving landscape of breast cancer research underscores the need for ongoing exploration of emerging therapeutic modalities and molecular targets specific to MBC [9,10].

Conclusion

In conclusion, this study provides a comprehensive analysis of mucinous breast cancer, combining a retrospective single-center review with a thorough examination of the existing literature. The findings contribute to the current body of knowledge surrounding MBC, shedding light on its clinicopathological characteristics, treatment outcomes, and prognostic factors. The identification of prognostic markers and molecular subtypes within MBC holds significant clinical implications, paving the way for more personalized and targeted therapeutic interventions. However, the challenges highlighted in the literature review underscore the ongoing need for collaborative research efforts to establish standardized guidelines for MBC management. As we navigate the complexities of mucinous breast cancer, this study serves as a stepping stone towards a more refined understanding of the disease, offering clinicians valuable insights to inform evidence-based decision-making.

Acknowledgment

None

Conflict of Interest

None

References

1. Sinn HP, Kreipe H (2013) A brief overview of the WHO classification of breast tumors, 4th edition, focusing on issues and updates from the 3rd edition. Breast Care (Basel) 8: 149-154.
2. Li CI, Uribe DJ, Daling JR (2005) Clinical characteristics of different histologic types of breast cancer. Br J Cancer 93: 1046-1052.
3. McCart Reed AE, Kutasovic JR, Lakhani SR, Simpson PT (2015) Invasive lobular carcinoma of the breast: Morphology, biomarkers and 'omics. Breast Cancer Res 17: 12.
4. Suryadevara A, Paruchuri LP, Banisaeed N, Dunnington G, Rao KA (2010) The clinical behavior of mixed ductal/lobular carcinoma of the breast: A clinicopathologic analysis. World J Surg Oncol 28: 51.
5. Metzger Filho O, Giobbie-Hurder A, Mallon E, Gusterson B, Viale G, et al. (2015) Relative effectiveness of letrozole compared with tamoxifen for patients with lobular carcinoma in the BIG 1-98 trial. J Clin Oncol 33: 2772-2779.
6. Arps DP, Healy P, Zhao L, Kleer CG, Pang JC (2013) Invasive ductal carcinoma with lobular features: a comparison study to invasive ductal and invasive lobular carcinomas of the breast. Breast Cancer Res Treat 138: 719-726.
7. Xiao Y, Ma D, Ruan M, Zhao S, Liu XY, et al. (2017) Mixed invasive ductal and lobular carcinoma has distinct clinical features and predicts worse prognosis when stratified by estrogen receptor status. Sci Rep 7: 1-9.
8. Ciriello G, Gatza ML, Beck AH, Wilkerson MD, Rhie SK, et al. (2015) Comprehensive molecular portraits of invasive lobular breast cancer. Cell 163: 506-519.
9. Wasif N, Maggard MA, Ko CY, Giuliano AE (2010) Invasive lobular vs. ductal breast cancer: a stage-matched comparison of outcomes. Ann Surg Oncol 17: 1862-1869.
10. Cristofanilli M, Gonzalez-Angulo A, Sneige N, Kau SW, Broglio K, et al. (2005) Invasive lobular carcinoma classic type: Response to primary chemotherapy and survival outcomes. J Clin Oncol 23: 41-48.