

# P-7

## Metastatic Neuroendocrine Tumors to the Breast: A Systematic Review

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### BACKGROUND

Neuroendocrine neoplasms (NENs) are tumors primarily originated in the digestive system and lungs. These neoplasms are classified into two groups: neuroendocrine carcinomas (NECs), and neuroendocrine tumors (NETs). Metastases to the breast are rare, counting for only 1% of cases. The objective of this research was to characterize patients with breast metastatic NENs based on a literature review.

### METHODS

A systematic review was conducted using PubMed, EMBASE, Lilacs, and OpenGrey databases, employing specific terms combined with Boolean operators, and limited to English and Spanish until July 2024. Case reports, case series, and cross-sectional studies documenting at least one case of breast metastatic NEN confirmed by histopathological study or functional imaging were included. The quality of the studies was assessed using an adapted Newcastle-Ottawa scale tool

### RESULTS

Eighty-one articles reporting 138 cases of breast metastatic NENs were included with chronological increase in frequency. The mean age of the patients was 52.7 years, including 3 male cases out of 138. NETs were more common than NECs (82,6% vs. 14,5%). The small bowel was the most frequent primary site (45,3%), followed by lung (26,6%). Metastatic involvement to the breast alone is uncommon, the most frequent extramammary metastases were liver, lymphatic, lung and bone (87%). The median time from the onset of NEN-attributable symptoms to diagnosis was 8 months. In 27 patients (23,3%), the breast lesion was the initial clinical manifestation. About 23% of cases were initially misdiagnosed as primary breast tumor. Symptoms compatible with carcinoid syndrome were reported in 18 patients (21,4%). Breast ultrasound showed hypoechoic lesions with irregular margins in most of the cases, mammography revealed poorly defined margins and functional Imaging were used in 35 cases.

Regarding the treatment, chemotherapy was used in 57,4%, somatostatin analogs in 36,2% of patients. Primary tumor resection was performed in 74,6% of cases, and metastasis resection in 73,5%.

A lower progression free survival in CNEs is described, statistically significant and a trend that did not reach significance of lower overall survival

## **CONCLUSIONS**

This systematic review has identified that these patients share several characteristics with the general NEN population, such as age at diagnosis and the prevalence of carcinoid syndrome. Additional metastases to other organs are common, and a significant proportion of cases were initially misdiagnosed as primary breast tumor. This is the first characterization of this population, and this finding highlights the importance of precise diagnostic evaluation to improve patient care and avoid misdiagnoses.

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