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Characterization of Gastroenteropancreatic Neuroendocrine Neoplasms in Older Adults

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BACKGROUND

Approximately 20% of patients with gastroenteropancreatic neuroendocrine neoplasms (GEPNENs) are older adults (OAs), defined as age ≥70 at diagnosis. In practice, treatment decisions are individualized based on comorbidities, performance status, and goals of care. An evidence-based approach to medical decision-making is needed. We aimed to characterize the clinicopathologic features of OA-GEPNENs, treatment patterns, and survival outcomes.

METHODS

We conducted a retrospective review of OA-GEPNEN (any grade, differentiation, or stage) identified between 2011-2023 using an IRB-approved database at the University of California, San Francisco. We compared demographic and clinicopathologic characteristics across treatment groups using Chi-squared and Mann-Whitney tests. Overall survival (OS) by age group was analyzed using the Kaplan-Meier method with log-rank test.

RESULTS

Of 1,023 patients, 165 (16.1%) had OA-GEPNEN; n=90 (55%) with GI) and n=75 (45%) with pancreatic NEN. The median age at diagnosis was 75 years; 52% female, and 68% White. Among 146 patients with tumor grade information, 42% grade 1, 36% grade 2, and 22% grade 3. At presentation, 46% had distant disease and 13% of tumors were poorly-differentiated. Overall, 125 paients (76%) were treated; 45% underwent surgical resection, 36% received somatostatin analogs, 19% chemotherapy, 13% focal radiation, 10% peptide receptor radionuclide therapy, and 16% liver-directed therapy. Chemotherapy use correlated with tumor grade (G1: 2% vs. G3: 59%, p<0.001), and males were more likely to receive chemotherapy (29% vs. 9%, p=0.001). Among patients with pancreatic NENs, median OS from diagnosis was 78 months, 39% of deaths were attributed to cancer. Patients diagnosed at age ≥80 were more likely to be female (68% vs. 40%, p=0.045) and less likely to undergo resection (18% vs. 53%, p=0.041) than those age 70-79. Among patients with stage I–III pancreatic NEN, those with age ≥80 had significantly worse OS

(median 80 vs. 175 months, p=0.012), however, there was no significant difference in patients with stage IV disease (median 18 vs. 41 months, p=0.17).

CONCLUSIONS

In this single-center retrospective cohort, age and sex-related differences in patient characteristics, treatment patterns, and outcomes suggest additional work is needed to refine treatment strategies for OA-GEPNENs and reduce barriers to care. Ongoing work is focused on understanding the impact of treatment on OS. Future analyses will incorporate the OA-GI-NEN cohort, additional comorbidity measures, age at treatment initiation, cause of death between stages, treatment tolerability, and cancer-specific survival. Ultimately, our findings will be compared with population-level datasets and a UCSF cohort of patients with early-onset NENs.

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