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EDITORIAL

Mixed neuroendocrine non-neuroendocrine tumors: The quest for evidence

Mauro Cives, Camillo Porta, Raffaele Palmirotta

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Abstract

Mixed neuroendocrine non-neuroendocrine neoplasms (MiNENs) are rare mixed tumors containing both neuroendocrine and non-neuroendocrine components that occupy at least 30% of the whole tumor. Biologically, both components appear to derive from an identical cellular precursor undergoing early dual differentiation or late transdifferentiation. While our understanding of MiNENs has improved in recent years, many areas of uncertainty remain. In this context, setting diagnostic criteria capable of capturing the continuum of disease biology while providing clinically meaningful information in terms of prognosis and response to treatments appears vital to advance the field and improve patients' outcomes. Evidence is needed to generate robust classification schemes, and multi-institutional cooperation will likely play a crucial role in building adequately powered cohorts to address some of the most pressing questions discussed in this Editorial. What is the minimum representation for each component needed to define MiNENs? How can the epidemiology of MiNENs change according to different diagnostic definitions? How can we generate the clinical evidence nee-ded to optimize the management of MiNENs?

Key Words: Mixed neuroendocrine non-neuroendocrine neoplasms; Neuroendocrine neoplasm; Neuroendocrine carcinoma; Mixed tumors; Digestive; Gastroenteropancreatic

Core Tip: In this Editorial, we highlight potential pitfalls in the current classification of mixed neuroendocrine non-neuroendocrine neoplasms and comment on challenges in the management of this heterogeneous group of malignancies in light of the paucity of evidence in the field. Improved biological and clinical knowledge is needed to generate robust classification schemes that will in turn provide clarity on the epidemiology of the disease, prognosis of affected patients and guidance for treatment tailoring.

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INTRODUCTION

In their timely review in this issue of *World Journal of Gastrointestinal Oncology*, Díaz-López *et al*[1] provide a comprehensive description of the biology and clinical management of mixed neuroendocrine non-neuroendocrine neoplasms (MiNENs). According to the 2022 World Health Organization (WHO) classification[2], MiNENs consist of both a neuroendocrine component and an adenocarcinoma, signet ring cell carcinoma or, more rarely, squamous cell carcinoma component, with each component exceeding 30%. While knowledge of this group of malignancies has evolved in recent years, the emergence of new data has perhaps raised as many questions as it has answered.

One key theme around MiNENs is how we exactly define them. "All models are wrong, but some are useful" is an aphorism attributed to the statistician George Box. While histopathological classifications are imperfect per se, they provide crucial information in oncology. However, a priori evidence (*i.e.* survival rates according to different groups) is needed to build models (histopathological classifications) capable of conveying useful information. Where is the evidence when it comes to the WHO classification of MiNENs? Non-neuroendocrine components are present in approximately 40% of gastroenteropancreatic neuroendocrine carcinomas[3], a figure way larger than the perceived frequency of MiNENs. Indeed, only a proportion of such malignancies (namely those tumors harboring neuroendocrine and non-neuroendocrine components exceeding the arbitrarily established 30% cut-off) are currently captured as MiNENs according to the 2022 WHO classification[2]. Is thus a scattered minor neuroendocrine or non-neuroendocrine component irrelevant in terms of clinical behavior, treatment response or prognosis? Possibly no, at least according to studies showing that a neuroendocrine component > 20% or even > 10% can affect patients' prognosis[4-7]. Not only do these data question the appropriateness of the arbitrarily chosen 30% cut-off, they also indicate that divergent lineage differentiation (namely the presence of neuroendocrine component in non-neuroendocrine cancers and vice versa) has profound prognostic (and perhaps therapeutic) implications per se. Notably, such concept has been already incorporated in the last edition of the WHO classification of thoracic tumors where "combined neuroendocrine/non-neuroendocrine lung tumors" refer to mixed entities combining high-grade neoplasms representing at least 10% of the whole tumor[8]. While the arbitrarily chosen 30% cut-off will be probably revisited in the upcoming WHO classifications of digestive tumors, quantification and reporting of the neuroendocrine and non-neuroendocrine components in mixed tumors is presently advisable. Why relatively small foci of neuroendocrine components in non-neuroendocrine cancers may dictate an aggressive clinical behavior remains largely unknown.

Building a model upon high-level evidence is key to render the model itself relevant and useful. While a relevant model should be able to precisely capture the biology of the disease in its entirety, a useful model should be able to set the criteria needed for defining the epidemiology of the disease, predicting prognosis and, ideally, response to treatments.

BUILDING A RELEVANT MODEL

So far, fundamental research investigating the molecular alterations of MiNENs has relied on the WHO classification criteria. This means that molecular investigations have been carried out on samples selected within the boundaries imposed by the WHO classification. By doing so, several distinctive traits of MiNENs have been identified. First, multiple studies[9-11] have shown that neuroendocrine and non-neuroendocrine components share a common trunk of mutations, with passenger mutations showing segregation in a specific component. Second, the spectrum of shared mutations is typically similar to that observed in pure adenocarcinomas of the specific anatomic site[11]. Third, allelic imbalances and chromosomal aberrations are more frequent in the neuroendocrine component rather than in the non-neuroendocrine component[12]. While these observations support the hypothesis that the neuroendocrine and non-neuroendocrine components of MiNENs have a monoclonal origin and then undergo an early dual differentiation or a late subclonal transdifferentiation, whether such a biological process could be confined within the boundaries of a percent threshold is disputable. In this context, whether divergent molecular alterations could be found in mixed tumors with different neuroendocrine/non-neuroendocrine percent representation (including representation below the 30% threshold) is currently unknown. A critical appraisal of the molecular underpinnings of mixed tumors of the digestive tract according to the relative component distribution is needed to inform future classification schemes.

BUILDING A USEFUL MODEL

Inconsistent reporting and varying nomenclature over the past several decades make it difficult to estimate the actual incidence of MiNENs. However, it is likely that the frequency of MiNENs is currently underestimated, primarily as result of challenges in diagnosis. Well-curated multi-institutional analyses from tertiary centers managing high volumes of patients with NENs might provide a better snapshot than tumor registries, although representativeness of the sample would be matter of concern. What would be the impact of lowering the percent threshold for each component in mixed tumors of the digestive tract in terms of incidence and prevalence? No answer can be given at present.

As pointed out by Díaz-López and colleagues in their review[1], the neuroendocrine component of MiNENs dictates patients' prognosis. Several lines of evidence support this conclusion. First, survival outcomes of MiNENs compare similarly to those of NEC patients, diverging from those of non-neuroendocrine cancers[13]. Second, the neuroendocrine component is almost always responsible for the metastatic process[14,15]. Third, the Ki-67 index of the neuroendocrine component determines the natural history of the disease[16,17]. Nevertheless, these concepts represent an oversimplification of the MiNEN reality. Indeed, MiNENs can contain tumor entities with variable degrees of biological aggressiveness in the neuroendocrine and non-neuroendocrine component, and a widely accepted grading system is presently lacking. Although La Rosa's proposal[3] to subdivide MiNENs into low-grade, intermediate-grade and high-grade entities according to the most aggressive component appears valuable to inform management decisions (Table 1), its prognostic relevance remains to be evaluated by large series studies. In this regard, caution should be posed when interpreting survival outcomes in MiNEN patients. Indeed, only lower stage tumors are likely to undergo surgery and can be consequently diagnosed as MiNENs, whereas advanced tumors are more likely to undergo biopsy and can be possibly categorized based on a sample where the dual component is not represented. As result, while observational studies may overestimate the benefit of surgery in MiNENs, comparisons between MiNENs and other tumor entities such as pure NECs or pure non-neuroendocrine cancers hold a substantial risk of selection bias and immortal time bias.

Table 1 Proposed grading and systemic management of mixed neuroendocrine non-neuroendocrine neoplasms

Grades	Neuroendocrine component	Non-neuroendocrine component	Systemic management
Low	Well-differentiated NET, Grade 1 Ki-67 < 3%, MI < 2/10 HPF, Grade 2 Ki-67 3-20, MI 2-20/10 HPF	Adenoma	Somatostatin analogs; Radiolabeled somatostatin analogs (when $SSTR^+$); Everolimus; Sunitinib (pancreatic primaries); Temozolomide-based chemotherapy
Intermediate	Well-differentiated NET, Grade 1 Ki-67 < 3%, MI < 2/10 HPF, Grade 2 Ki-67 3-20, MI 2-20/10 HPF	Adenocarcinoma, signet ring cell carcinoma, mucinous neoplasm	5-FU-based regimens (*i.e.* FOLFIRINOX, FOLFIRI, FOLFOX, *etc*), Targeted therapies according to molecular profiling
High	NEC (small/large cell)	Adenocarcinoma, squamous cell carcinoma, acinar cell carcinoma, adenosquamous carcinoma, mucinous carcinoma, signet ring cell carcinoma	Etoposide/Platinum 5-FU-based regimens (*i.e.* FOLFIRINOX, FOLFIRI, FOLFOX, *etc*), Targeted therapies according to molecular profiling

HPF: High power field; MI: Mitotic index; NEC: Neuroendocrine carcinoma; NET: Neuroendocrine tumor.

Evidence on MiNEN treatment is very limited, and guidelines[18] often extrapolate data from neuroendocrine and non-neuroendocrine space. In most institutions, when a poorly differentiated neuroendocrine component is present, the etoposide/platinum regimen is recommended; on the other hand, when the non-neuroendocrine component is the most aggressive one, 5-FU-based combinations are preferred[19]. Whether etoposide/platinum combination is the most effective option for the upfront treatment of high-grade NENs has been recently questioned[20], and prospective evidence, possibly generated by using innovative clinical trial designs[21], is needed to guide the management of patients with MiNEN.

CONCLUSION

The frequency of MiNENs appears very low at present, but future changes to the WHO classification as well as improved recognition of these entities among both pathologists and clinicians might change the epidemiology of the disease, allowing a better understanding of their biology, natural history and clinical management. While the need of the hour is how we exactly define MiNENs, questing for high-level evidence through collaborative studies will certainly be instrumental to improve patients' outcomes.

FOOTNOTES

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of the manuscript; Cives M and Palmirotta R contributed to the discussion and design of the manuscript; Cives M, Porta C and Palmirotta R contributed to the writing and editing of the manuscript, and review of literature.

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REFERENCES

1 **Díaz-López S**, Jiménez-Castro J, Robles-Barraza CE, Ayala-de Miguel C, Chaves-Conde M. Mixed neuroendocrine non-neuroendocrine neoplasms in gastroenteropancreatic tract. *World J Gastrointest Oncol* 2024; **16**: 1166-1179 [PMID: 38660639 DOI: 10.4251/wjgo.v16.i4.1166]
2 **WHO Classification of Tumours Editorial Board**. WHO classification of endocrine and neuroendocrine tumours. Available from: https://tumourclassification.iarc.who.int/welcome/
3 **La Rosa S**, Sessa F, Uccella S. Mixed Neuroendocrine-Nonneuroendocrine Neoplasms (MiNENs): Unifying the Concept of a Heterogeneous Group of Neoplasms. *Endocr Pathol* 2016; **27**: 284-311 [PMID: 27169712 DOI: 10.1007/s12022-016-9432-9]
4 **Park JY**, Ryu MH, Park YS, Park HJ, Ryoo BY, Kim MG, Yook JH, Kim BS, Kang YK. Prognostic significance of neuroendocrine components in gastric carcinomas. *Eur J Cancer* 2014; **50**: 2802-2809 [PMID: 25201164 DOI: 10.1016/j.ejca.2014.08.004]
5 **Lewin K**. Carcinoid tumors and the mixed (composite) glandular-endocrine cell carcinomas. *Am J Surg Pathol* 1987; **11** Suppl 1: 71-86 [PMID: 3544888 DOI: 10.1097/00000478-198700111-00007]
6 **de Mestier L**, Cros J, Neuzillet C, Hentic O, Egal A, Muller N, Bouché O, Cadiot G, Ruszniewski P, Couvelard A, Hammel P. Digestive System Mixed Neuroendocrine-Non-Neuroendocrine Neoplasms. *Neuroendocrinology* 2017; **105**: 412-425 [PMID: 28803232 DOI: 10.1159/000475527]
7 **La Rosa S**. Challenges in High-grade Neuroendocrine Neoplasms and Mixed Neuroendocrine/Non-neuroendocrine Neoplasms. *Endocr Pathol* 2021; **32**: 245-257 [PMID: 33786701 DOI: 10.1007/s12022-021-09676-z]
8 **WHO classification of tumors Editorial Board**. Thoracic Tumours WHO Classification of Tumours, 5th ed. 2021
9 **Sun L**, Zhang J, Wang C, Zhao S, Shao B, Guo Y, Liu Y, Sun Y. Chromosomal and molecular pathway alterations in the neuroendocrine carcinoma and adenocarcinoma components of gastric mixed neuroendocrine-nonneuroendocrine neoplasm. *Mod Pathol* 2020; **33**: 2602-2613 [PMID: 32461621 DOI: 10.1038/s41379-020-0579-z]
10 **Yuan W**, Liu Z, Lei W, Sun L, Yang H, Wang Y, Ramdas S, Dong X, Xu R, Cai H, Li JZ, Ke Y. Mutation landscape and intra-tumor heterogeneity of two MANECs of the esophagus revealed by multi-region sequencing. *Oncotarget* 2017; **8**: 69610-69621 [PMID: 29050228 DOI: 10.18632/oncotarget.18678]
11 **Jesinghaus M**, Konukiewitz B, Keller G, Kloor M, Steiger K, Reiche M, Penzel R, Endris V, Arsenic R, Hermann G, Stenzinger A, Weichert W, Pfarr N, Klöppel G. Colorectal mixed adenoneuroendocrine carcinomas and neuroendocrine carcinomas are genetically closely related to colorectal adenocarcinomas. *Mod Pathol* 2017; **30**: 610-619 [PMID: 28059096 DOI: 10.1038/modpathol.2016.220]
12 **Fujita Y**, Uesugi N, Sugimoto R, Eizuka M, Matsumoto T, Sugai T. Gastric mixed neuroendocrine-non-neuroendocrine neoplasm (MiNEN) with pancreatic acinar differentiation: a case report. *Diagn Pathol* 2019; **14**: 38 [PMID: 31077220 DOI: 10.1186/s13000-019-0815-3]
13 **Lin J**, Zhao Y, Zhou Y, Tian Y, He Q, Lin J, Hao H, Zou B, Jiang L, Zhao G, Lin W, Xu Y, Li Z, Xue F, Li S, Fu W, Li Y, Xu Z, Li Y, Chen J, Zhou X, Zhu Z, Cai L, Li E, Li H, Zheng C, Li P, Huang C, Xie J. Comparison of Survival and Patterns of Recurrence in Gastric Neuroendocrine Carcinoma, Mixed Adenoneuroendocrine Carcinoma, and Adenocarcinoma. *JAMA Netw Open* 2021; **4**: e2114180 [PMID: 34313744 DOI: 10.1001/jamanetworkopen.2021.14180]
14 **Sahnane N**, Furlan D, Monti M, Romualdi C, Vanoli A, Vicari E, Solcia E, Capella C, Sessa F, La Rosa S. Microsatellite unstable gastrointestinal neuroendocrine carcinomas: a new clinicopathologic entity. *Endocr Relat Cancer* 2015; **22**: 35-45 [PMID: 25465415 DOI: 10.1530/ERC-14-0410]
15 **Li Y**, Yau A, Schaeffer D, Magliocco A, Gui X, Urbanski S, Waghray R, Owen D, Gao ZH. Colorectal glandular-neuroendocrine mixed tumor: pathologic spectrum and clinical implications. *Am J Surg Pathol* 2011; **35**: 413-425 [PMID: 21317713 DOI: 10.1097/PAS.0b013e3182093657]
16 **Milione M**, Maisonneuve P, Pellegrinelli A, Grillo F, Albarello L, Spaggiari P, Vanoli A, Tagliabue G, Pisa E, Messerini L, Centonze G, Inzani F, Scarpa A, Papotti M, Volante M, Sessa F, Fazio N, Pruneri G, Rindi G, Solcia E, La Rosa S, Capella C. Ki67 proliferative index of the neuroendocrine component drives MANEC prognosis. *Endocr Relat Cancer* 2018; **25**: 583-593 [PMID: 29592868 DOI: 10.1530/ERC-17-0557]
17 **Milione M**, Maisonneuve P, Grillo F, Mangogna A, Centonze G, Prinzi N, Pusceddu S, Garzone G, Cattaneo L, Busico A, Bossi P, Spaggiari P, Pellegrinelli A, Del Gobbo A, Ferrero S, Kankava K, Pruneri G, Rolli L, Roca E, Bercich L, Tironi A, Benvenuti MR, Gallazzi MS, Romano

R, Berruti A, Pastorino U, Capella C. Ki-67 Index of 55% Distinguishes Two Groups of Bronchopulmonary Pure and Composite Large Cell Neuroendocrine Carcinomas with Distinct Prognosis. *Neuroendocrinology* 2021; **111**: 475-489 [PMID: 32365350 DOI: 10.1159/000508376]

18 **Sorbye H**, Grande E, Pavel M, Tesselaar M, Fazio N, Reed NS, Knigge U, Christ E, Ambrosini V, Couvelard A, Tiensuu Janson E. European Neuroendocrine Tumor Society (ENETS) 2023 guidance paper for digestive neuroendocrine carcinoma. *J Neuroendocrinol* 2023; **35**: e13249 [PMID: 36924180 DOI: 10.1111/jne.13249]

19 **Cives M**, Strosberg JR. Gastroenteropancreatic Neuroendocrine Tumors. *CA Cancer J Clin* 2018; **68**: 471-487 [PMID: 30295930 DOI: 10.3322/caac.21493]

20 **Hadoux J**, Afchain P, Walter T, Tougeron D, Hautefeuille V, Monterymard C, Lorgis V, Thuillier F, Baudin E, Scoazec JY, Lepage C, Desgrippes R. FOLFIRINEC: a randomized phase II trial of mFOLFIRINOX vs platinum-etoposide for metastatic neuroendocrine carcinoma of gastroenteropancreatic or unknown origin. *Dig Liver Dis* 2021; **53**: 824-829 [PMID: 33994125 DOI: 10.1016/j.dld.2021.04.016]

21 **Beckman RA**, Natanegara F, Singh P, Cooner F, Antonijevic Z, Liu Y, Mayer C, Price K, Tang R, Xia A, Apostolaros M, Granville C, Michaels D. Advancing innovative clinical trials to efficiently deliver medicines to patients. *Nat Rev Drug Discov* 2022; **21**: 543-544 [PMID: 35760887 DOI: 10.1038/d41573-022-00109-y]

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