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## PEER-REVIEW REPORT

**Name of journal:** World Journal of Gastroenterology

**Manuscript NO:** 49159

**Title:** Apparent-diffusion-coefficient-based histogram analysis differentiates histological subtypes of periampullary adenocarcinoma

**Reviewer's code:** 03726743

**Position:** Editorial Board

**Academic degree:** MD, PhD

**Professional title:** Associate Professor, Director

**Reviewer's country:** United States

**Author's country:** China

**Reviewer chosen by:** Ruo-Yu Ma

**Reviewer accepted review:** 2019-08-20 15:36

**Reviewer performed review:** 2019-08-22 17:38

**Review time:** 2 Days and 2 Hours

SCIENTIFIC QUALITY	LANGUAGE QUALITY	CONCLUSION	PEER-REVIEWER STATEMENTS
<input type="checkbox"/> Grade A: Excellent	<input type="checkbox"/> Grade A: Priority publishing	<input type="checkbox"/> Accept	Peer-Review:
<input type="checkbox"/> Grade B: Very good	<input type="checkbox"/> Grade B: Minor language	(High priority)	<input type="checkbox"/> Anonymous
<input type="checkbox"/> Grade C: Good	polishing	<input type="checkbox"/> Accept	<input type="checkbox"/> Onymous
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade C: A great deal of	(General priority)	Peer-reviewer's expertise on the
<input type="checkbox"/> Grade E: Do not	language polishing	<input type="checkbox"/> Minor revision	topic of the manuscript:
publish	<input type="checkbox"/> Grade D: Rejection	<input type="checkbox"/> Major revision	<input type="checkbox"/> Advanced
		<input type="checkbox"/> Rejection	<input type="checkbox"/> General
			<input type="checkbox"/> No expertise
			Conflicts-of-Interest:
			<input type="checkbox"/> Yes
			<input type="checkbox"/> No

## SPECIFIC COMMENTS TO AUTHORS

In the manuscript entitled, “Volumetric ADC Histogram Analysis in Differentiating Histological Subtypes of Periapillary Carcinomas”, the authors present an original study using volumetric ADC data acquired from MRI to preoperatively differentiate between IPAC and PPAC. This is an interesting and multi-disciplinary subject with good clinical importance, as such differentiation can impact treatment decisions and outcomes. The major weaknesses of the manuscript are the small number of patients, the small proportion of PAC patients included (out of a starting n of 476), and some methodological uncertainties. While the content is generally good, in its current form, the manuscript would not make an optimal contribution to the biomedical literature. Additional comments and suggestions, many of which can be easily resolved and all of which are intended to strengthen the manuscript, are provided below: Title: -Please consider starting with “MRI-based” or similar so as to better orient the reader (at face value). The title might be changed to something like: “MRI-based Volumetric ADC Histogram Analysis Differentiates Histological Subtypes of Periapillary Carcinoma” Abstract: -In the sentence, “However, the classification of histological subtypes is difficult before surgery”, it might read better to include the words “to determine” after the word “difficult”. -Please include in the introduction section what the underlying imaging modality of ADC is (MRI, CT, either) as pertinent to this study. -In the aim section, can remove the word “the” for improved readability. -The terms “periapillary neoplasm” and “periapillary adenocarcinoma” are both used; is this intentional? (e.g. do the authors mean to ascribe distinct meanings?) Also, further down in the text, the term “periapillary tumor” is used, further adding to what seems to be heterogeneity in nomenclature. Introduction: -“ No significant survival benefit has been proven in periapillary adenocarcinomas after receiving chemotherapy, indicating the histological heterogeneity of the periapillary malignancy” seems to not make sense and/or is out of place. Please revise. -This series of sentences is quite choppy and needs

better transitions/revisions for readability: “The median overall survival was 71.7 months for IPAC and 33.3 months for PPAC [6]. PPAC is prone to show a greater response to gemcitabine-based therapies, while the IPAC responds better to fluoropyrimidine [9]. Tumor histology was recommended for driving therapeutic strategies [5,10].” -“At present, the classification of histological subtypes mainly relies on standardized dissected PD specimens.” What of EUS-FNA, biliary brushings, and endoscopic biopsies? Are they not adequate to perform histological classification, at least in a subset/certain percentage of patients? -In the sentence, “Bi et al [15] found a combination of a progressive enhancement pattern and low ADCmin values (b800)...”, ADC should be defined (rather than defining the abbreviation further along in the Intro). -“In addition, the use of gadolinium-based contrast agents is limited in patients with impaired renal function.” This is true; however, if contrast can improve diagnostic performance in those who do not have impaired renal function (the majority of patients in most settings), it would be useful to study this. Methods: -(b) patents histopathologically confirmed with lesions other than IPAC or PPAC”; change “patents” to “patients”. -Please provide an overview of what b values mean/indicate. Also, why would one expect differences at a b value of 1,000 but not at 800? Some biological basis should exist/be explained (if not in the methods, than in the intro or discussion). Results: -Perhaps one of the biggest limitations of the study, as shown in the flow diagram, is that it includes less than 10% of the n=476. The drop for 476 to 125 is of considerable magnitude; could the authors further break this down? E.g. how many didn’t undergo MRI, how many underwent MRI but at lower Tesla, etc. Discussion: -Need to discuss the limitation/bias associated with the fact that the patients included in the study represent a very small proportion of the patients with suspect periampullary tumors (in addition to being a small number overall) -Please Tables/Figures: -Generally satisfactory.



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## INITIAL REVIEW OF THE MANUSCRIPT

### *Google Search:*

- ☐ The same title
- ☐ Duplicate publication
- ☐ Plagiarism
- ☐ Y] No

### *BPG Search:*

- ☐ The same title
- ☐ Duplicate publication
- ☐ Plagiarism
- ☐ Y] No