



PEER-REVIEW REPORT

Name of journal: *World Journal of Radiology*

Manuscript NO: 87771

Title: Factors associated with gastrointestinal stromal tumor rupture and pathological risk: A single-center retrospective study

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 04732834

Position: Peer Reviewer

Academic degree: MD, PhD

Professional title: Director, Full Professor, Surgical Oncologist

Reviewer's Country/Territory: Romania

Author's Country/Territory: China

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Reviewer chosen by: Yu-Lu Chen

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Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input checked="" type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Novelty of this manuscript	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input checked="" type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty
Creativity or innovation of this manuscript	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input checked="" type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No creativity or innovation



Scientific significance of the conclusion in this manuscript	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input checked="" type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No scientific significance
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input type="checkbox"/> Grade B: Minor language polishing <input checked="" type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input checked="" type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Peer-reviewer statements	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

The manuscript is in general terms interesting, while very difficult to read due to major English problems and some inconsistencies, I will try to point some of the problems that I could face: 1. Title is not clear. In my understanding you are trying to predict risk of rupture and high risk tumors based on preoperative CT scans. The title should be changed as it is impossible to understand it without a full reading of the article. 2." GIST biopsy samples are few and inconvenient, and easily lead to tumor metastasis" - while biopsy can indeed be difficult and many of us performe US guided fine needle biopsies, I cannot see why they would be incoveninet or lead to metastasis. Probably the author refers to open biopsies but they should pinpoint that. That is not a gold standard in clinical practice. 3. "selected as the research objects" I believe it should be rephrased. Calling patients objects is not advisable. 4. Exclusion criteria: the lesion was tumor relapse - Probably in inclusion criteria you shoul point to primary tumors only. 5. Table 1 does not refer to your data and should be used as supplementary data if at all. 6. CT indicators: - axial measurement of the diameter - why? hy not coronal? I suggest using the maximum diameter. - Tumor morphology: Observe whether the shape of



the tumor is regular - that is very unclear and very much observer dependent. Please define without so much much subjectivity or do not use such a characteristic. - same for clear and unclear boundary - I am not used with such characteristics. Do you define a propensity to invade or is it invasion in adjacent organs? Again very subjective. If you use that please reevaluate with double or triple blinded readings and see if you have all the same results. 7. Criteria for rupture: bloody ascites - please check in literature if all agree with you. If the tumor is not opened intraoperatively it is hard to sustain. Microscopic infiltration of other organ - I disagree - that is not rupture; Intralesional dissection or segmental resection are surgeon induced errors and I would not consider them as rupture in the sense of your paper, but intraoperative contamination based on bad surgery or impossibility to perform adequate surgery (in such cases no gesture is probably better + neoadjuvant therapy). 8. I disagree with your statistical evaluation. It might be correct but it analyses wrong parameters. If you evaluate the risk of rupture based on imaging, then tumor morphology and Ki67 have nothing to do with it. These are postoperative data and have no place in here. Similar with evaluation of pathological grade - you should only use imaging data in order to predict the type of tumor in the end. 9. Page 8 - tumor diameter is inversely correlated with risk grades. I really do not believe. That means that small tumors have a high risk. I presume it is an error. 10. Page 8 "In addition, the higher the Ki-67 expression index, the higher the pathological risk grades of GIST". while not essential in our discussion as you do not discuss imaging data, I believe we all agree that Ki67 refers to rapid multiplying tumors and by definition should be correlated with high risk tumors. Plus it has nothing to do with your proposed research. 11. Page 10: "The results showed that gender was negatively correlated with pathological risk grades of GIST" that is a nonsense. Do not know even what you mean. How can male/female correlate with anything. 12. "Tumor diameter was positive correlated with pathological risk grades of GIST ($r = 0.47$, $P =$



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0.01)." that contradicts with obwservation 9 in my document. 13. Discussion : We found that pathological risk grades, tumor diameter, tumor shape, internal necrosis, air-liquid interface and Ki-67 expression index were associated with the rupture of GIST, and gender, tumor diameter, tumor rupture, Ki -67 expression index were correlated with pathological risk grades of GIST. Our findings suggested that, in the GIST patients we screened, tumor diameter, tumor shape, internal necrosis, and gas-liquid interface were risk factors associated with the rupture of GIST, while gender and tumor diameter were associated with pathological risk grades of GIST." it looks like you repeat the sentence twice. 14. . "Nonetheless, the definition of tumor rupture is controversial, with many surgeons arguing that tumor rupture is defined as not infiltrating adjacent structures at the time of surgical resection[17]" I do not uderstand that nor I beiliev it is correct. This statement should be made more clear. I believe is out of context. 15. Signs of malignancy on CT scans should not be in discussion. Maybe a table in supplementary data or apendix. Conclusion: I believe your data are interesting but very incosistent analysis. Define better what you wish to study and reorganize your data.



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Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Novelty of this manuscript	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input checked="" type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty
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Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input checked="" type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Peer-reviewer statements	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

Comments to the Authors Summary The study aims to analyze the correlation between imaging findings and both the rupture and pathological risk grades of gastrointestinal stromal tumors (GIST). The results indicate associations between various factors like tumor diameter, tumor morphology, internal necrosis, and gas-liquid interface with GIST rupture. Similarly, gender and tumor diameter were found to correlate with the pathological risk of GIST. Abstract 1. Methods: A sentence in the "Methods" section seems better suited for the "Results" section, as it discusses study outcomes. I suggest relocating this sentence for better structural clarity. 2. Results: The statement "gender was negatively correlated with the pathological risk grades of GIST" could be clearer. Could you specify whether male or female gender is associated with lower or higher risk grades? Introduction 1. On page 3, line 5, you state that needle biopsy is not recommended before surgery. Please include relevant references to substantiate this assertion. 2. The study's aim is briefly outlined but could be enhanced by the addition of specific research questions or hypotheses, which would lend more clarity and focus to the introduction. Methods 1. Table 1: Is the table original? Although

references are cited, it might be helpful to also mention established risk classifications like the Miettinen or AFIP systems. 2. Patient Selection and Radiological Techniques: The absence of detailed criteria for these elements may compromise the study's replicability. Providing this information is recommended. 3. Statistical Analysis: Pearson's correlation is designed to measure linear relationships between quantitative variables. The method is applied here to a mix of factors, some of which are not quantitative. Consulting a statistician and potentially using logistic regression may offer a more appropriate analytical approach. Results 1. Table 2: Categorizing continuous variables may affect the study's conclusions, especially given Pearson's correlation's sensitivity to outliers and limitation to linear relationships. Providing additional statistics like median, 25th, and 75th percentile values could offer a more comprehensive understanding of data distribution. 2. Table 2: Were cases of rectal GIST, which generally have higher malignant potential, not included in this study? Additionally, the lack of information on treatment modalities and presence of metastases is a noticeable omission. 3. Table 2: Please change the column header from "Factors, grades" to "Grades." 4. On page 8, lines 3-4, the statement "tumor diameter was inversely related to the pathological risk grades of GIST" warrants verification. Is this accurate? 5.

Beyond statistical significance, the clinical relevance of the findings should also be discussed. Discussion 1. Comparing your findings with existing research would add both depth and context. The current approach, which uses established risk factors for correlation analysis, could be perceived as lacking in novelty. Addressing this by discussing how your results align or differ from existing research could be beneficial.



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RE-REVIEW REPORT OF REVISED MANUSCRIPT

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Reviewer's Country/Territory: Romania

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Language quality	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input checked="" type="checkbox"/> Major revision <input type="checkbox"/> Rejection
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statements

Conflicts-of-Interest: [] Yes [**Y**] No

SPECIFIC COMMENTS TO AUTHORS

The authors should follow the classic structure of a scientific article. This new version is chaotic and some chapters I do not understand. Introduction is a copnclusion of the work while materials and methos starts with results of your work. In this form the paper can not be read.



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Language quality	<input checked="" type="checkbox"/> Grade A: Priority publishing <input type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
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statements

Conflicts-of-Interest: [] Yes [**Y**] No

SPECIFIC COMMENTS TO AUTHORS

Comments to the Authors Thank you for your revisions and the comprehensive responses to the reviewer's queries. I have reviewed the amended manuscript and find it mostly acceptable. Nevertheless, there is one aspect that needs further clarification, as indicated below. In regard to my initial question about the Methods section (#1), your response suggests that the table presented sets the standards for pathological risk grades following primary GIST resection. This table is purportedly based on the synthesis of findings from multiple related studies. I recommend that you explicitly mention this in the Methods section and cite the relevant references to substantiate the originality of Table 1.