JournalName:	AsianJournalofAdvancedResearchandReports
ManuscriptNumber:	Ms_AJARR_130197
TitleoftheManuscript:	$\label{eq:heat} Histopathological and Biochemical Investigations of the Brain upon Sub-acute Pentazocine Administration.$
TypeoftheArticle	

PART1:Comments

	Reviewer'scomment	Author's Feedback part inthemanuscript.ltism here)
Pleasewriteafewsentencesregardingtheimportan ce of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.	Advantagesofthisresearch Theresearchonthetoxicologicaleffectsofsub-acutepentazocineadministrationoffersseveral advantages: 1. InsightintoOpioidEffects:Thisstudyprovidesvaluableinsightsinto thebiochemicaland histopathological impacts of pentazocine, a commonly used analgesic among sickle-cell disease patients in Nigeria. By evaluating the effects on the cerebral cortex, the research highlights potential risks associated with opioid use, particularly in vulnerable populations suffering from chronic pain (Page 1). 2. Identification of Oxidative Stress: The findings indicate significant reductions in antioxidantenzymeactivities,suchascatalase(CAT)andsuperoxidedismutase(SOD),alon gside increased levels of malondialdehyde (MDA), a marker of oxidative stress. This suggests that pentazocine may contribute to oxidative damage in the brain, which is crucial for understanding the drug's safety profile (Page 6). 3. Pathological Evidence: The study documents specific histopathological changes in the cerebral cortex, including neuronal cell loss and vacuolations, which provide concrete evidence of the drug's neurotoxic effects. This information is essential for healthcare providers to make informeddecisionsregardingpainmanagementstrategiesinpatientswhomaybeatriskofopi oid dependence (Page 7). Overall, the research underscores the need for careful consideration of pentazocine's use in clinical settings, particularlyregardingitspotentialneurotoxiceffectsandtheimportanceofmonitoringpatie nts for signs of oxidative stress and neuronal damage.	
Isthetitleofthearticle suitable? (Ifnotpleasesuggestanalternativetitle)	yes	

(Please correct the manuscript and highlight that nandatorythatauthorsshouldwritehis/herfeedback

Is the abstract of the article comprehensive? Do you suggesttheaddition(ordeletion)ofsomepointsinth is section? Please write your suggestions here.	yes	
Isthemanuscriptscientifically,correct?Pleasewrit e here.	 Toevaluatetheaccuracyandprecisionofthisstudy,severalimportantaspectsshouldbeconsidered: Research Design: This studyhas utilized a randomized controlled trial (RCT) method, which helps reduce biases and increase the credibilityofthe results. The experimental groups were randomly assignedtofourgroups,includingonecontrolgroupandthreetreatmentgroupswithdifferentdosesof pentazocine. Biochemical and Histopathological Methods: The study has used standard methods to evaluate theactivityofantioxidantenzymes(CATandSOD)andhistopathologicalexaminations. Thesemetho ds help ensure the accuracy and validity of the results, showing a decrease in enzyme activities and an increase in malondialdehyde (MDA) levels in the treatment groups. StatisticalAnalysis:Thedatawereanalyzedusingone-wayanalysisofvariance(ANOVA)and post-hoc tests. These methods help determine the significance of the results and indicate that the observed differences between groups are statistically valid. Limitations: One limitation of this study is the lack of assessment of systemic inflammatory markersintheblood, suchascytokines, todeterminebraintissueinflammation. Thispointismentioned in the conclusion of the study and highlights the need for further research. Overall, thisstudyhasevaluatedthetoxiceffectsofpentazocineonthebraincortexusingappropriate design, valid methods, and accurate statistical analyses. However, it is important to consider its limitations as well. 	
Arethereferencessufficientandrecent?lfyouhave suggestions of additional references, please mention them in the review form.	 Yes,butadd 1. Khamooshi F, Doraji-Bonjar S, Akinnawo AS, Ghaznavi H, Salimi-Khorashad AR, and Khamooshi MJ (2023)DarkClassicsinChemicalNeuroscience:ComprehensiveStudyontheBiochemicalMechani sms and Clinical Implications of Opioid Analgesics. Chemical Methodologies 7(12): 964-993. DOI: <u>https://doi.org/10.48309/chemm.2023.414616.1731</u> 2. KhamooshiF,AkinnawoAS,Doraji-BonjarS,andModarresi- AlamAR(2024)MitragynineChemistry: Extraction, Synthesis, and Clinical Effects. Chemistry Africa. DOI: 10.1007/s42250-024-00921-6 	



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	AboutthisManuscript, The study investigates the toxicological effects of sub-acute pentazocine administration on the cerebral	
	cortex, particularly in the context of its use among sickle-cell disease patients in Nigeria.Twenty- eightadult Wistarrats weredividedintofourgroups, withonecontrolgroupreceivingnormalsalineandtheothersreceivinggradeddosesofpentazocine(30 mg/kg,60 mg/kg, and 90 mg/kg) for 14 days. Resultsindicated a decrease incatalase (CAT) and superoxide dismutase (SOD) activities, alongside anincrease in malondialdehyde (MDA) levelsin the brain tissues of treated groups, suggesting moderate toxicity and potential inflammatory responses in the brain.	
	BenefitsoftheResearch	
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	2. Histopathologicalanalyses: The results of the research indicate that the the rapeutic groups treated with pentazocine have significant histopathological changes in the brain cortex, including loss of nerve cells and accumulation of granular cells.	
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<u>PART 2:</u>

	Reviewer's comment	Author's comment(if highlight that part in th write his/her feedback
Are there ethical issues in this manuscript?	(If yes, Kindly please write down the ethical issues here in details)	

Reviewer Details:

Name:	Ferydoon Khamooshi
Department, University & Country	University of Zabol, Iran

if agreed with reviewer, correct the manuscript and he manuscript. It is mandatory that authors should k here)