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The ARRIVE guidelines 2.0: author checklist

The ARRIVE Essential 10

These items are the basic minimum to include in a manuscript. Without this information, readers and reviewers cannot assess the reliability of the findings.

Item		Recommendation	Section/line number, or reason for not reporting
Study design	1	For each experiment, provide brief details of study design including: a. The groups being compared, including control groups. If no control group has been used, the rationale should be stated. b. The experimental unit (e.g. a single animal, litter, or cage of animals).	2.1. Animals and experimental design 2.1. Animals and experimental design
Sample size	2	a. Specify the exact number of experimental units allocated to each group, and the total number in each experiment. Also indicate the total number of animals used. b. Explain how the sample size was decided. Provide details of any *a priori* sample size calculation, if done.	Section 2.1 Twenty-four rats were used in total, with six animals allocated to each of the four experimental groups (n = 6/group). Section 2.1 The sample size (n = 6 animals per group) was determined based on previously published studies using similar experimental models and assessing comparable
Inclusion and exclusion criteria	3	a. Describe any criteria used for including and excluding animals (or experimental units) during the experiment, and data points during the analysis. Specify if these criteria were established *a priori.* If no criteria were set, state this explicitly. b. For each experimental group, report any animals, experimental units or data points not included in the analysis and explain why. If there were no exclusions, state so. c. For each analysis, report the exact value of *n* in each experimental group.	Section 2.1 All included animals were normal. No specific predefined inclusion or exclusion criteria were reported beyond the use of adult male Wistar rats (190–220 g). Section 2.1 No animals or experimental units were excluded from the study or subsequent analyses. Section 2.1 n = 6 animals per experimental group for the reported experimental outcomes.
Randomisation	4	a. State whether randomisation was used to allocate experimental units to control and treatment groups. If done, provide the method used to generate the randomisation sequence. b. Describe the strategy used to minimise potential confounders such as the order of treatments and measurements, or animal/cage location. If confounders were not controlled, state this explicitly.	Section 2.1 The animals were randomly allocated to four experimental groups before treatment initiation using a random-number table. Treatments were administered according to the assigned group using standardised experimental procedures. Treatment administration and sample collection were performed in a fixed order and were not randomised or counterbalanced across experimental groups. The same experimental protocols and measurement procedures were applied consistently across all groups. However, no specific measures were implemented to control potential confounding effects associated with procedural order.
Blinding	5	Describe who was aware of the group allocation at the different stages of the experiment (during the allocation, the conduct of the experiment, the outcome assessment, and the data analysis).	Sections 2.1 and 2.4 The animals were randomly allocated to four experimental groups sing a random-number table. Because the treatments differed between groups, the investigators administering the treatments were aware of group allocation during the experimental
Outcome measures	6	a. Clearly define all outcome measures assessed (e.g. cell death, molecular markers, or behavioural changes). b. For hypothesis-testing studies, specify the primary outcome measure, i.e. the outcome measure that was used to determine the sample size.	Section 2.3-2.5 The outcome measures comprised serum cardiac injury biomarkers (cTnI, CK-MB, and LDH); myocardial oxidative stress and antioxidant markers (MDA, GSH, SOD, and No single primary outcome measure was prospectively specified for sample-size determination. The study evaluated multiple biochemical, histological, and molecular endpoints to assess BPA-induced cardiotoxicity and the effects of nifuroxazide.
Statistical methods	7	a. Provide details of the statistical methods used for each analysis, including software used. b. Describe any methods used to assess whether the data met the assumptions of the statistical approach, and what was done if the assumptions were not met.	Section 2.7 Data were analysed using GraphPad Prism version 8.0. Results are expressed as mean ± SD. Differences among the four experimental groups were evaluated using Section 2.7 Data normality was evaluated using the Shapiro-Wilk test.
Experimental animals	8	a. Provide species-appropriate details of the animals used, including species, strain and substrain, sex, age or developmental stage, and, if relevant, weight. b. Provide further relevant information on the provenance of animals, health/immune status, genetic modification status, genotype, and any previous procedures.	2.1. Animals and experimental design 2.1. Animals and experimental design
Experimental procedures	9	For each experimental group, including controls, describe the procedures in enough detail to allow others to replicate them, including: a. What was done, how it was done and what was used. b. When and how often. c. Where (including detail of any acclimatisation periods). d. Why (provide rationale for procedures).	Sections 2.1 and 2.2 (animal allocation, experimental treatments, acclimatisation, sample collection, anaesthesia and euthanasia). Sections 2.1 and 2.2 (animal allocation, experimental treatments, acclimatisation, sample collection, anaesthesia and euthanasia). Sections 2.1 and 2.2 (animal allocation, experimental treatments, acclimatisation, sample collection, anaesthesia and euthanasia). Sections 2.1 and 2.2 (animal allocation, experimental treatments, acclimatisation, sample collection, anaesthesia and euthanasia).
Results	10	For each experiment conducted, including independent replications, report: a. Summary/descriptive statistics for each experimental group, with a measure of variability where applicable (e.g. mean and SD, or median and range). b. If applicable, the effect size with a confidence interval.	3. Results NA – Effect sizes with confidence intervals were not calculated or reported.

The Recommended Set

These items complement the Essential 10 and add important context to the study. Reporting the items in both sets represents best practice.

Item		Recommendation	Section/line number, or reason for not reporting
Abstract	11	Provide an accurate summary of the research objectives, animal species, strain and sex, key methods, principal findings, and study conclusions.	Abstract
Background	12	a. Include sufficient scientific background to understand the rationale and context for the study, and explain the experimental approach. b. Explain how the animal species and model used address the scientific objectives and, where appropriate, the relevance to human biology.	1. Introduction Adult male Wistar rats were selected because they provide a well-established in vivo model for investigating cardiovascular toxicity and evaluating potential cardioprotective interventions. The rat cardiovascular system shares important physiological and structural characteristics with that of humans, allowing the assessment of systemic and cardiac responses to BPA exposure. This model enables the integrated evaluation of cardiac injury, oxidative stress, inflammation, histopathological alterations and molecular signalling pathways, which are relevant to the pathophysiological processes underlying human cardiovascular injury. It was therefore considered appropriate for investigating BPA-induced cardiotoxicity and the potential protective effects of rutin/quinic
Objectives	13	Clearly describe the research question, research objectives and, where appropriate, specific hypotheses being tested.	1. Introduction
Ethical statement	14	Provide the name of the ethical review committee or equivalent that has approved the use of animals in this study, and any relevant licence or protocol numbers (if applicable). If ethical approval was not sought or granted, provide a justification.	Ethics Approval and Consent to Participate
Housing and husbandry	15	Provide details of housing and husbandry conditions, including any environmental enrichment.	2.1. Animals and experimental design
Animal care and monitoring	16	a. Describe any interventions or steps taken in the experimental protocols to reduce pain, suffering and distress. b. Report any expected or unexpected adverse events. c. Describe the humane endpoints established for the study, the signs that were monitored and the frequency of monitoring. If the study did not have humane endpoints, state this.	2.1. Animals and experimental design None Sections 2.1 and 2.2
Interpretation/ scientific implications	17	a. Interpret the results, taking into account the study objectives and hypotheses, current theory and other relevant studies in the literature. b. Comment on the study limitations including potential sources of bias, limitations of the animal model, and imprecision associated with the results.	4. Discussion 4. Discussion/Limitations
Generalisability/ translation	18	Comment on whether, and how, the findings of this study are likely to generalise to other species or experimental conditions, including any relevance to human biology (where appropriate).	4. Discussion/Limitations
Protocol registration	19	Provide a statement indicating whether a protocol (including the research question, key design features, and analysis plan) was prepared before the study, and if and where this protocol was registered.	NA
Data access	20	Provide a statement describing if and where study data are available.	Availability of Data and Materials
Declaration of interests	21	a. Declare any potential conflicts of interest, including financial and non-financial. If none exist, this should be stated. b. List all funding sources (including grant identifier) and the role of the funder(s) in the design, analysis and reporting of the study.	Conflicts of Interest Funding