Supplementary data

STROBE Statement—checklist of items that should be included in reports of observational studies

	Item No.	Recommendation	Page No.	Relevant text from manuscript
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	Page 1, lines 11–12	"184 patients were prospectively allocated to … groups."
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	Page 1, lines 8–19	"Objective: To assess the association …" "Method: 184 patients were prospectively allocated …" "Results: Combination therapy decreased vascular crisis incidence … and improved 30-day digit survival …" "Conclusion: … associated with reduced vascular crisis and favorable 30-day outcomes …"
Introduction				
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	Page 1, lines 28–35; Page 1, lines 37–50	"postoperative vascular crisis … contributing to a 10–30% failure rate" "standard treatment … responses vary considerably" "There is a lack of data on the pharmacodynamics of combination therapy …"
Objectives	3	State specific objectives, including any prespecified hypotheses	Page 1, lines 9–10	"To assess the association of combined atorvastatin and nitroglycerin ointment with vascular crisis, circulating biomarkers and clinical outcomes …"
Methods				
Study design	4	Present key elements of study design early in the paper	Page 2, lines 59–60; Page 2, lines 67–80	"This was a prospective observational study" "treatment allocation was based on clinical decision-making and patient informed consent (non-

				randomized)" "No blinding was performed …"
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	Page 2, lines 61–62; Page 2, lines 70–80; Page 2, lines 114–115; Page 3, lines 116–121	"at Yongkang First People's Hospital from April 2024 to June 2025" "topical nitroglycerin ointment … 6 hours post-surgery" "the combination group received oral atorvastatin calcium …" "A follow-up evaluation was conducted 30 days post-surgery …" "Postoperative day 7 was chosen as the primary time point …"
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants	Page 2, lines 87–96; Page 2, lines 114–115	"Inclusion criteria: Patients aged 18–65 years … unilateral digital amputation …" "Successful emergency replantation … was required." "Exclusion criteria: … prolonged ischemic time … pre-existing immune disorders … recent statin/nitrate use …" "A follow-up evaluation was conducted 30 days post-surgery …"
		(*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed *Case-control study*—For matched studies, give matching criteria and the number of controls per case	Not applicable	Not applicable
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	Page 2, lines 68–80; Page 2, lines 98–115; Page 3, lines 116–117	"control group … nitroglycerin ointment" "combination group received oral atorvastatin calcium" "Vascular crisis incidence was documented on postoperative day 7" "serum inflammatory … and vasoactive … biomarkers" "outcomes classified as survival, partial necrosis, or complete necrosis"
Data sources/	8*	For each variable of interest, give sources of data and details of methods of assessment	Page 2, lines 98–	"Venous blood was collected … on

measurement		(measurement). Describe comparability of assessment methods if there is more than one group	112	postoperative day 7 …" "biomarkers using standard laboratory assays" "Tissue perfusion and microcirculation were assessed via TcPO2, SpO2, CRT and infrared thermometry" "Detailed laboratory protocols are provided in the supplementary material."
Bias	9	Describe any efforts to address potential sources of bias	Page 2, lines 59–60; Page 3, line 122; Page 7, lines 214–225	"may introduce selection bias" "No blinding was performed …" "Laboratory personnel were not blinded … which may introduce detection bias" "Critical confounders … were not incorporated into multivariate adjustment or stratified analyses"
Study size	10	Explain how the study size was arrived at	Page 2, lines 63–66	"primary outcome" "Using G*Power … the calculated sample size was 76 per group" "After adjusting for 10–20% dropouts, 184 patients … were enrolled."

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Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	Page 3, lines 125–130	"All quantitative variables were tested for normality …" "continuous data (mean ± SD)" "Categorical data [n (%)] …"
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	Page 3, lines 125–130	"independent t-tests" "paired t-tests" "Bonferroni correction" "χ^2 or Fisher's exact tests"
		(*b*) Describe any methods used to examine subgroups and interactions	Not applicable	Not applicable
		(*c*) Explain how missing data were addressed	Not applicable	Not applicable
		(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed *Case-control study*—If applicable, explain how matching of cases and controls was addressed *Cross-sectional study*—If applicable, describe analytical methods taking account of sampling strategy	Not applicable	Not applicable
		(*e*) Describe any sensitivity analyses	Not applicable	Not applicable
Results				
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	Not applicable	Not applicable
		(b) Give reasons for non-participation at each stage	Not applicable	Not applicable
		(c) Consider use of a flow diagram	Not applicable	Not applicable
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	Page 2, lines 81–84; Page 3, lines 121–122 (Table 1)	"comparable at baseline regarding age, gender and lesion side" "All calculated standardized mean differences (SMDs) were less than 0.2" "Table 1: Baseline demographic and clinical characteristics …"
		(b) Indicate number of participants with missing data for each variable of interest	Not applicable	Not applicable
		(c) *Cohort study*—Summarise follow-up time (eg, average and total amount)	Page 2, lines 114–115; Page 3, lines 119–121	"A follow-up evaluation was conducted 30 days post-surgery …" "Postoperative day 7 was chosen as the primary time point …"
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time	Page 3, lines 135–163; Page 4, lines	"incidence of postoperative vascular crisis was 16.30% … compared to 6.52% …"

			166–169	"TNF-α, IL-6 and CRP were significantly more suppressed …" "TcPO2 and SpO2 … increased … CRT was shortened …" "NO and eNOS … rise and ET-1 … decline …" "adverse event rates … 8.70% … and 10.87% …" "higher overall rate of digit survival …"
		Case-control study—Report numbers in each exposure category, or summary measures of exposure	Not applicable	Not applicable
		Cross-sectional study—Report numbers of outcome events or summary measures	Not applicable	Not applicable
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	Page 3, lines 135–138	"P=0.037" "RR … 0.399 (95% CI: 0.168–0.948)"
		(*b*) Report category boundaries when continuous variables were categorized	Not applicable	Not applicable
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	Page 3, lines 137–138	"absolute risk reduction (ARR) was 9.78%" "number needed to treat (NNT) was 10.2"

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Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	Not applicable	Not applicable
Discussion				
Key results	18	Summarise key results with reference to study objectives	Page 4, lines 173–176; Page 7, lines 235–240	"combined therapy may be linked to … reduced systemic inflammatory cytokine levels, improved microcirculatory perfusion and favorable shifts in vasoactive mediator balance" "associated with reduced vascular crisis incidence and improved 30-day digit survival …"
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	Page 7, lines 214–231	"Non-randomized design with potential selection bias" "Lack of blinding …" "Short follow-up duration" "No direct molecular or tissue-level measurements …" "Critical confounders … were not incorporated …" "Small number of vascular crisis events …"
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	Page 7, lines 205–212; Page 7, lines 235–240	"should be interpreted in the context of patient-centered outcomes" "30-day follow-up window is insufficient …" "These findings are hypothesis-generating rather than confirmatory …"
Generalisability	21	Discuss the generalisability (external validity) of the study results	Page 7, lines 237–239	"limited to the study population and short-term follow-up"
Other information				
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	Page 7, lines 248–249	"Funding" "None."

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.