Supplementary Table 1. STROBE statement

Checklist of items that should be included in reports of observational studies

Section/Topic	Item No	Recommendation	Reported on Page No
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	1
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	2
Objectives	3	State specific objectives, including any prespecified hypotheses	2
Methods			
Study design	4	Present key elements of study design early in the paper	2-3
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	3-4
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	2-3
		(*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	

Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	4
Data sources/measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	2-4
Bias	9	Describe any efforts to address potential sources of bias	3-4
Study size	10	Explain how the study size was arrived at	3-4
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	4-5
		(*b*) Describe any methods used to examine subgroups and interactions	4-5
		(*c*) Explain how missing data were addressed	4
		(*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	3
		(*e*) Describe any sensitivity analyses	

Section/Topic	Item No	Recommendation	Reported on Page No
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	3
		(b) Give reasons for non-participation at each stage	3
		(c) Consider use of a flow diagram	5
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	3, 5
		(b) Indicate number of participants with missing data for each variable of interest	3-4
		(c) *Cohort study*—Summarise follow-up time (eg, average and total amount)	3-4
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time	5
		Case-control study—Report numbers in each exposure category, or summary measures of exposure	
		Cross-sectional study—Report numbers of outcome events or summary measures	
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	4-5
		(*b*) Report category boundaries when continuous variables were categorized	4-5
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	5

Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	5-6
Discussion			
Key results	18	Summarise key results with reference to study objectives	6
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	7
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	6-7
Generalisability	21	Discuss the generalisability (external validity) of the study results	7
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	8

*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.

Supplementary Table 2. Comparison between included and excluded patients who underwent laparoscopic surgery

	Excluded patients (n=6,646)	Included patients (n=12,414)
Postoperative AKI (%)*	5.7	3.9
Age (years)*	43.9	44.2
Male sex (%)*	25.0	10.4
Weight (kg)	57.0	56.8
Preoperative MAP (mmHg)	89.9	89.6
Intraoperative MAP (mmHg)*	86.0	84.2
eGFR (%)		
<30 ml/min/1.73 m^2	0.9	0.6
30-60 ml/min/1.73 m^2	4.9	4.1
⩾60 ml/min/1.73 m^2	94.1	95.3
ASA physical status (%)*		
I	12.5	16.5
II	44.7	68.5
III	8.4	14.3
IV	0.4	0.7

ASA, American Society of Anesthesiologists; AKI, acute kidney injury; MAP, mean arterial pressure.

Values are presented as the mean or number proportion; comparisons were performed using the chi-squared tests for categorical variables; Student's t-tests were used for normally distributed continuous variables, and Kruskal-Wallis tests were used for non-normally distributed continuous variables (Mann-Whitney U test between two groups).* $P < 0.05$.

Supplementary Table 3. Comparison of results for primary analysis of AKI and intraoperative MAP with sensitivity analysis

	Mean Intraoperative MAP (mmHg)								
	<70	70-75	75-80	80-85	85-90	90-95	95-100	100-105	≥105
Primary (n=12,414)	1.07(0.58-1.90)	1.00(0.66-1.51)	1.11(0.80-1.53)	Reference	1.35(0.99-1.85)	1.35(0.96-1.89)	**1.83(1.27-2.67)***	**2.43(1.56-3.81)***	**1.91(1.11-3.31)***
Restricted to ASA I-II patients (n=10,552)	0.92(0.45-1.88)	0.97(0.61-1.54)	0.96(0.67-1.38)	Reference	1.27(0.90-1.78)	1.24(0.86-1.79)	**1.71(1.15-2.55)***	**2.20(1.37-3.55)***	**1.86(1.06-3.28)***
Excluding patients with preoperative hypertension (n=10,946)	1.01(0.51-2.01)	0.75(0.45-1.25)	1.11(0.77-1.60)	Reference	**1.53(1.09-2.15)***	**1.46(1.01-2.13)***	**1.99(1.32-2.99)***	**2.70(1.67-4.35)***	**2.10(1.15-3.85)***
Excluding patients with preoperative diabetes (n=11,771)	0.89(0.45-1.76)	1.00(0.65-1.54)	1.03(0.73-1.45)	Reference	1.24(0.89-2.15)	1.31(0.92-1.87)	**1.76(1.19-2.59)***	**2.12(1.31-3.43)***	**1.70(0.95-3.05)***
Excluding patients with cancer (n=12，130)	1.07(0.58-1.97)	0.99(0.65-1.52)	1.10(0.78-1.53)	Reference	**1.38(1.00-1.91)***	1.39(0.98-1.97)	**1.97(1.35-2.88)***	**2.09(1.30-3.38)***	1.69(0.93-3.05)
Restricted to patients with age <65 years (n=11,234)	0.98(0.49-1.95)	0.75(0.58-1.49)	1.17(0.82-1.68)	Reference	**1.54(1.09-2.16)***	**1.51(1.05-2.18)***	**1.86(1.24-2.80)***	**2.72(1.69-4.38)***	**1.86(1.02-3.39)***

Restricted to patients with preoperative hemoglobin ≥90g/L (n=11,534)	1.92(0.44-1.90)	Reference	1.10(0.71-1.70)	Reference	1.32(0.94-1.84)	1.36(0.95-1.94)	**1.90(1.29-2.79)***	**2.32(1.44-3.73)***	**2.11(1.20-3.70)***
Excluding patients with intraoperative blood loss more than 1000ml(n=12,079)	1.05(0.56-1.97)	1.03(0.67-1.58)	1.09(0.78-1.53)	Reference	1.35(0.98-1.87)	1.34(0.94-1.90)	**1.86(1.27-2.72)***	**2.60(1.66-4.09)***	**1.83(1.03-3.28)***
Excluding patients with invasive BP monitoring (n=8932)	1.19(0.78-1.81)	1.19(0.78-1.81)	0.93(0.50-1.72)	Reference	1.39(0.77-2.50)	**1.94(1.07-3.52)***	**2.03(1.07-3.84)***	**3.45(1.72-6.93)***	**2.79(1.26-6.17)***

All models were adjusted for age, gender, ASA physical status, complicated with diabetes, preoperative usage of β-Receptor antagonists, CCBs, lipid-lowering drugs, intraoperative usage of cisatracuram and vasoactive drugs, preoperative eGFR, urea nitrogen, intraoperative mean heart rate, duration of surgery, duration of intubation, and whether or not a patient entered the intensive care unit after surgery.

*P<0.05 compared with the reference (80-85mmHg).

Supplementary Table 4. Comparison of results for primary analysis of AKI and exposure time of IOTH with sensitivity analysis

	Exposure time of IOTH				
	0 min	0-5 min	5-10 min	10-20 min	≥20 min
Primary (n=12,414)	Reference	1.23(0.80-1.60)	1.22(0.88-1.70)	1.09(0.78-1.51)	**1.56(1.20-2.02)***
Restricted to ASA I-II patients (n=10,552)	Reference	1.17(0.79-1.74)	1.29(0.90-1.87)	1.19(0.83-1.71)	**1.65(1.24-2.20)***
Excluding patients with preoperative hypertension (n=10,946)	Reference	1.08(0.73-1.60)	**1.47(1.03-2.12)***	1.20(0.83-1.73)	**1.75(1.31-2.33)***
Excluding patients with preoperative diabetes (n=11,771)	Reference	1.14(0.80-1.65)	1.18(0.83-1.68)	1.07(0.76-1.52)	**1.57(1.20-2.06)***
Excluding patients with cancer (n=12,130)	Reference	1.09(0.76-1.56)	1.26(0.90-1.76)	1.13(0.81-1.58)	**1.66(1.27-2.16)***
Restricted to patients with age <65 years (n=11,234)	Reference	1.11(0.75-1.63)	1.41(0.99-2.01)	1.15(0.80-1.64)	**1.65(1.25-2.18)***

Restricted to patients with preoperative hemoglobin ≥90g/L (n=11,534)	Reference	1.03(0.71-1.51)	1.31(0.92-1.85)	1.22(0.86-1.71)	**1.63(1.24-2.14)***
Excluding patients with intraoperative blood loss more than 1000ml(n=12,079)	Reference	1.16(0.81-1.66)	1.2`(0.86-1.72)	1.15(0.82-1.62)	**1.72(1.31-2.24)***
Excluding patients with invasive BP monitoring (n=8932)	Reference	1.27(0.77-2.09)	**1.60(1.02-2.53)***	1.52(0.97-2.38)	**2.30(1.59-3.31)***

All models were adjusted for age, gender, ASA physical status, complicated with diabetes, preoperative usage of β-Receptor antagonists, CCBs, lipid-lowering drugs, intraoperative usage of cisatracuram and vasoactive drugs, preoperative eGFR, urea nitrogen, intraoperative mean heart rate, duration of surgery, duration of intubation, and whether or not a patient entered the intensive care unit after surgery.

**P*<0.05 compared with the reference (0 min).