

Investigation on Preoperative Use of Chinese Herbal Medicine and Adverse Events in Surgical Patients

Yu-Ting Cheng¹, Tso-Chou Lin² and Sunny Jui-Shan Lin¹

² Department of Anesthesiology, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan, ROC

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INTRODUCTION

The concurrent use of Chinese herbal medicine (CHM) and Western medicine is common in Taiwan, raising concerns about interactions. Research has shown increased bleeding risks when combining CHMs like Danggui and Ginseng with anticoagulants, but these studies often focus on Western contexts. Additionally, there is limited data on CHM use before and during surgery, particularly regarding bleeding risks.

We therefore conducted a survey to evaluate: (1) the prevalence of CHM use among surgical patients, (2) the frequency of surgeons inquiring about CHM use preoperatively, and (3) potential adverse events associated with CHM use during hospitalization for surgery.

METHOD

Study Design and Participants

The survey was conducted at Tri-Service General Hospital, a medical center in Taiwan. Inclusion criteria for participants were patients over 18 years old, classified as American Society of Anesthesiologists (ASA) physical status I to III, and undergoing surgeries in the surgical, gynecology, or other departments. We conducted purposive sampling to select the departments with the highest surgical volume within the hospital as the focus of our study.

Data collection

Following Institutional Review Board approval, patients were surveyed regarding their CHM use and suspension. Pre-operative, intraoperative, and post-operative data were recorded. Figure 1 illustrates the study's objectives and questionnaire process. Anesthesia, nursing, and post-discharge records were reviewed to assess any adverse events related to CHM use.

Statistical analysis

All values were expressed as mean $\pm$ standard deviation or number (percentage). Chi-square tests and multivariate logistic regression were used for bivariate comparisons between groups with and without CHM.

RESULTS

General characteristics

From March 25, 2023, to November 14, 2023, a total of 1,995 subjects were recruited for analysis, 58.4% of whom were women. Additional characteristics are detailed in Table 1.

Recommendations from surgeons and anesthesiologists

Before hospitalization, 86.9% of patients reported that surgeons did not inquire about CHM use; 2.9% continued, 3.1% were advised to suspend, and 7.2% received no guidance. Among those visiting anesthesia consultations, 84.9% were not asked about CHM use; 2.0% continued, 2.0% were advised to stop, and 12.0% received no advice (Fig. 2).

Preoperative use of CHM

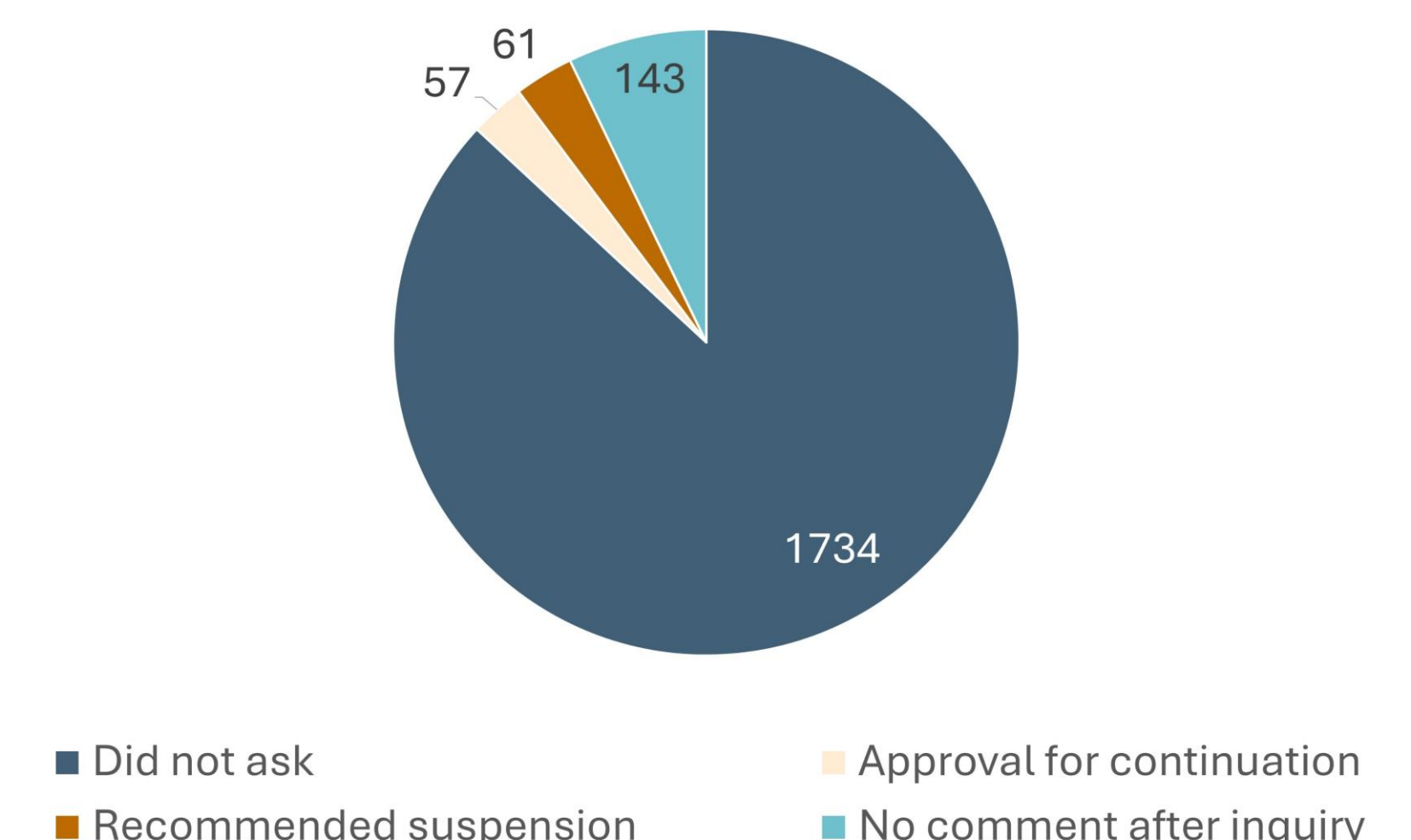
Most participants discontinued CHM before surgery without specific advice, often due to instructions to stop Western medicine. However, 19 patients continued CHM during hospitalization. No significant abnormalities or adverse events were detected during surgery, hospitalization, or follow-up, and education level did not influence these decisions (Table 2).

Limitation

The proportion of subjects keeping their use of Chinese herbal medicine was much lower than those who discontinued the medication. Therefore, the limited result might not represent the general status in Taiwan.

Figure 2. The proportions of surgeons or anesthesiologists' recommendations

Did surgeons ask about your use of CHM or health food before surgery?



Did anesthesiologists ask about your use of CHM or health food during the clinic visit?

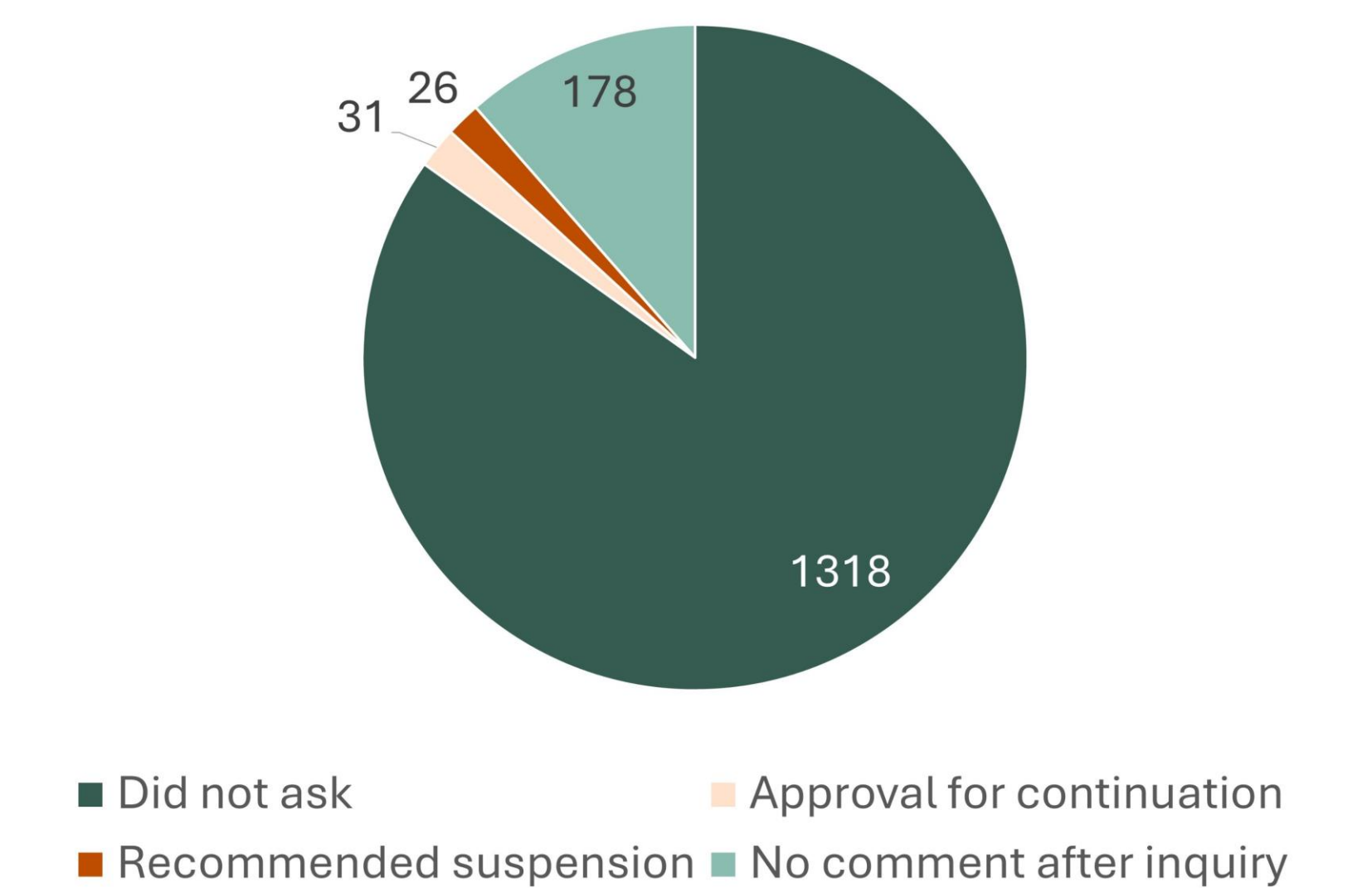


Table 1. Demographic of the subjects

Variable	Total	Male	Female	p-value
Number(%)	1995(100.0%)	830(41.6%)	1165(58.4%)	
Age	52.02±15.49	49.52±16.21	53.81±14.71	<0.001
Age stratification				<0.001
18-39 yrs	463(23.2%)	259(31.2%)	204(17.5%)	
40-64 yrs	1022(51.2%)	383(46.1%)	639(54.8%)	
≥65 yrs	510(25.6%)	188(22.7%)	322(27.6%)	
BMI	24.82±4.73	25.91±4.52	24.04±4.72	<0.001
Departments of surgery				0.006
Orthopedics	680(34.1%)	298(35.9%)	382(32.8%)	
General surgery	435(21.8%)	185(22.3%)	250(21.5%)	
Otolaryngology	377(18.9%)	126(15.2%)	251(21.5%)	
Gynecology	193(9.7%)	0	193(16.5%)	
Colorectal surgery	143(7.2%)	64(7.7%)	79(6.8%)	
Thoracic surgery	105(5.3%)	37(4.5%)	68(5.8%)	
Urology	61(3.1%)	25(3.0%)	36(3.1%)	
Ophthalmology	1(0.1%)	1(0.1%)	0(0.0%)	

Table 2. Blood routine, surgery records, anesthetic records, nursing records and adverse effects recorded clinical record after discharge of the subjects

Variable	Total	With CHM	With health food	With both	With neither of them	p-value
Number (%)	1995(100.0%)	107(5.4%)	954(47.8%)	279(14.0%)	655(32.8%)	
Blood routine before surgery						
WBC ($10^3/\mu\text{L}$)	7.15±3.31	7.04±2.29	7.17±4.09	6.92±2.22	7.25±2.47	0.551
RBC ($10^6/\mu\text{L}$)	4.58±0.65	4.53±0.67	4.55±0.63	4.46±0.58	4.67±0.69	<0.001
Hb (g/dL)	13.27±1.83	13.21±2.11	13.21±1.72	13.04±1.73	13.48±1.96	0.003
PLT ($10^3/\mu\text{L}$)	256.99±70.07	265.90±82.26	253.63±68.90	261.55±69.82	258.51±69.62	0.145
PT (sec.)	57.70±210.45	28.42±75.16	64.16±242.20	52.21±183.69	55.36±184.55	0.379
INR	0.97±0.08	0.97±0.08	0.97±0.08	0.96±0.08	0.97±0.08	0.651
APTT (sec.)	13.33±0.96	13.35±0.93	13.33±0.99	13.26±0.86	13.36±0.97	0.509
Blood loss during surgery (C.C.)	36.05±4.02	36.13±3.74	36.06±4.20	35.58±3.24	36.22±4.10	0.172
Adverse effect during surgery	0	0	0	0	0	NA
Adverse effect before discharge	0	0	0	0	0	NA
Clinical records a month after discharge	0	0	0	0	0	NA

CONCLUSIONS

Building on a previous study, our survey focuses on the follow-up of each patient's status after surgery. Our findings indicate that there is no significant risk of adverse events in patients who continue using CHM prescribed by qualified Chinese medical physicians during and after surgery. Therefore, it may be advisable for patients to continue their CHM treatment to manage underlying symptoms during hospitalization for surgery.

Additionally, the questionnaire emphasizes the importance of physicians being informed of their patients' use of CHM before surgery. We aim to highlight the need for increased awareness of the concurrent use of Western and Chinese medicine and advocate for further research to ensure patient safety in this context.

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Figure 1. Explanation and process of the survey

