



## Original contribution

# Regional anesthesia practice in China: a survey<sup>☆,☆☆</sup>



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**Abstract**

**Study objective:** Neuraxial anesthesia has been widely used in China. Recently, Chinese anesthesiologists have applied nerve stimulator and ultrasound guidance for peripheral nerve blocks. Nationwide surveys about regional anesthesia practices in China are lacking. We surveyed Chinese anesthesiologists about regional anesthesia techniques, preference, drug selections, complications, and treatments.

**Design:** A survey was sent to all anesthesiologist members by WeChat. The respondents can choose mobile device or desktop to complete the survey. Each IP address is allowed to complete the survey once.

**Main results:** A total of 6589 members read invitations. A total of 2654 responses were received with fully completed questionnaires, which represented an overall response rate of 40%. Forty-one percent of the respondents reported that more than 50% of surgeries in their hospitals were done under regional anesthesia. Most of the participants used test dose after epidural catheter insertion. The most common drug for test dose was 3-mL 1.5% lidocaine; 2.6% of the participants reported that they had treated a patient with epidural hematoma after neuraxial anesthesia. Most anesthesiologists (68.2%) performed peripheral nerve blocks as blind procedures based on the knowledge of anatomical landmarks. A majority of hospitals (80%) did not stock Intralipid; 61% of the respondents did not receive peripheral nerve block training.

**Conclusions:** The current survey can serve as a benchmark for future comparisons and evaluation of regional anesthesia practices in China. This survey revealed potential regional anesthesia safety issues in China. © 2016 Elsevier Inc. All rights reserved.

## 1. Study objective

Regional anesthesia/analgesia (RA) has become popular in surgical care and postoperative pain management. RA

can provide site specific, high-quality pain relief, while reducing opioid consumption [1]. Peripheral nerve blocks provide postoperative pain management, enhance early mobilization and rehabilitation, and improve patient satisfaction [1]. Neuraxial anesthesia has been widely used in China. Recently, Chinese anesthesiologists have applied nerve stimulator (NS) and ultrasound (US) guidance for peripheral nerve blocks.

To the best of our knowledge, nationwide surveys about RA practices in China are lacking. A national survey may provide data for comparisons among different levels of hospitals,

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identifying problems, and consequently continuous improvement of clinical practices. The results may also be used as a tool for assessment of the teaching process, knowledge expansion, and hospital developments associated with RA.

The current survey is the first nationwide attempt to document the current trends in RA practice in China. The results may be used as a benchmark for future comparisons and evaluation of RA practices in China.

We surveyed Chinese anesthesiologists about RA techniques, preference, drug selections, complications, and treatments.

## 2. Design

There are more than 78,000 registered anesthesiologist members in New Youth Anesthesia Forum. After approval from the committee of New Youth Anesthesia Forum, a survey was sent to all anesthesiologist members by WeChat. The respondents can choose mobile device or desktop to complete the survey. Each IP address is allowed to complete the survey once.

The survey was designed to ask questions about RA techniques, drug selections, fluid administration, complications, and postoperative pain management.

The survey questions included basic demographic information about the anesthesiologist's hospital level (grade I, II, or III) and title. To minimize the bias for few open questions, question formats were used: Yes or No boxes, selection of best possible answer out of 2 to 5 alternatives options. No monetary compensation was provided for any kind of participation in this survey.

Statistical analyses were performed using  $\chi^2$  test. All tests were 2 tailed with a type I error rate of 0.05.

## 3. Main results

The survey was undertaken from December 2, 2015, to January 2, 2016. New Youth Anesthesia Forum sends new messages to each member every day. The members read the messages that they are interested. The server can record how many members open and read the invitation. Only those members who read the survey invitation were included in the study. A total of 6589 members read invitations. A total of 2654 responses were received with fully completed questionnaires, which represented an overall response rate of 40%. Majority of surveys (2583) were completed by mobile devices; the rest (71) was received by computer.

### 3.1. Participant's demographic data

The respondents were distributed throughout the country (Fig. 1; Table 1).

Hospitals in China are classified according to a 3-tier system by a hospital's ability to provide medical care and medical education and conduct medical research. Hospitals are designated as grade I, grade II, or grade III. Physician title included resident physician, attending physician, and chief physician.

### 3.2. Neuraxial block techniques

Neuraxial block was initiated in the lateral position by the majority of anesthesiologists (Table 2). Most anesthesiologists

geographical distribution

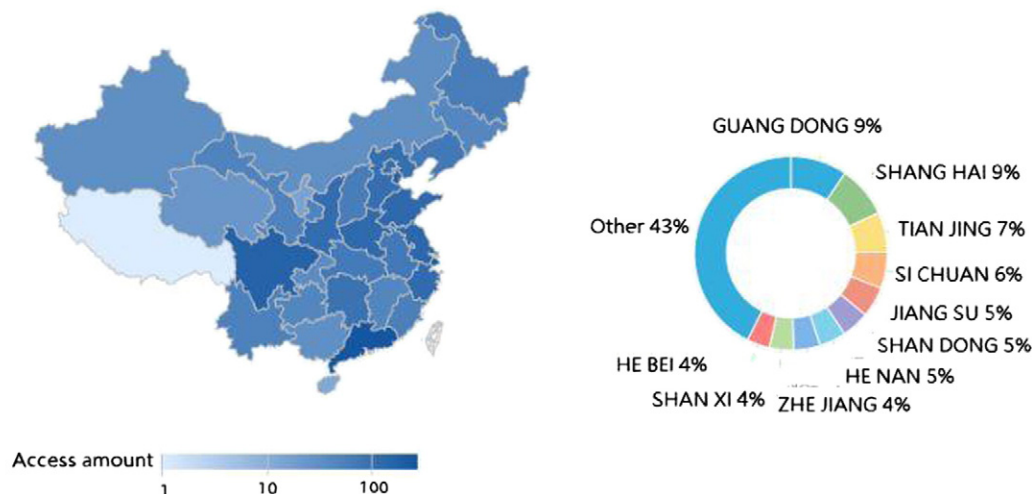


Fig. 1 Participant's demographic data.

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