

Use and patient affordability of opioid analgesics for cancer pain management in different regions of China: a retrospective analysis of data from 2006 to 2016

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Abstract

Background Little information is available on the need for opioid analgesics based on demographic, economic and disease spectrum data, or on patient affordability of opioid analgesics, in different regions of China. This study analysed the level of, and trends in, opioid analgesic use in different regions of China from 2006 to 2016, calculated the need for opioid analgesics based on demographic, economic and disease spectrum data from the different regions, and analysed the gap between need and actual consumption. Patient affordability of opioid analgesics for cancer pain management was also measured.

Methods Opioid analgesic consumption data were obtained from the China Hospital Pharmaceutical Audit (CHPA) database of IQVIA (formerly Quintiles and IMS Health). We assessed the clinical need for opioid analgesics by calculating the morphine use density (MUD, daily defined doses of morphine per 100 000 population) and its growth rate from 2006 to 2016 in China and its seven regions. Regional need for opioid analgesics (in morphine equivalents) was estimated based on regional cancer registration data and standard treatment doses of opioids, as defined by international guidelines for cancer pain management. The study adopts WHO and Health Action International (HAI) methods to evaluate patient affordability of opioid analgesics for cancer pain management using standardized costs in daily defined doses (DDD).

Findings The national MUD increased from 1.45 DDD/100 000/day in 2006 to 6.93 DDD/100 000/day in 2016. Southern China had the highest MUD (9.67 DDD/100 000/day), and northwest China had the lowest MUD (3.28 DDD/100 000/day) in 2016. The actual use of morphine equivalents accounted for only 21.5% of the morphine required for cancer pain management at the national level; 26% in east, 36% in south, 11% in southwest, and 12% in northwest China. The DDD costs of all studied opioid analgesics ranged from CNY ¥10.80 to ¥848.88. Except for morphine injections, the out-of-pocket payments for a standard full course of treatment with opioid analgesics were more than the daily disposable income in all regions. Patient affordability of opioid analgesics is low according to the WHO and HAI method.

Interpretation Opioid analgesic use for the management of cancer pain was insufficient relative to needs in China, and varied markedly across regions with different levels of economic development. Long-term use may pose a heavy economic burden to patients. The findings call for actions to strengthen cancer pain management, and to improve the affordability of drugs.

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Contributors

All authors conceived the study. JS and ZH had a key role in study design. ZH and XS wrote the first draft of the abstract. YD, SL, MZ, and SG conducted data extraction and preliminary data analysis. All authors were involved in data analysis and interpretation. JS and YL made substantial contributions to the final data analysis and interpretation, and provided critical comments for revision of the abstract. All authors have seen and approved the final version of the abstract for publication.

Declaration of interests

We declare no competing interests.

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