

## China artificial joint annual data report

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*To the Editor:* Artificial joint replacement, the most effective treatment for end-stage arthropathy of the hip and knee joint caused by various reasons, has been popularly performed around the world.<sup>[1]</sup> It was reported the number of total hip replacement case in the United States in 2017 was 1.1 million and the number of total knee replacement case in 2018 was 1.3 million.<sup>[2]</sup> And the case number is increasing annually.

With the biggest population in the world, there is a big volume of joint replacement procedures in China. However, there is lack of artificial joint annual data report in China up-to-date. In this study, we intended to collect the data of artificial joint replacement in the mainland of China within the recent 10 years, and make a preliminary artificial joint annual report.

As national joint replacement registration system is not available in China nowadays, a questionnaire was sent to the manufactures and companies that provided the artificial joints implants for the Chinese market. The annual data of artificial joints implanted was collected from January 2011 to December 2019. The cases of total hip arthroplasty (THA), total knee arthroplasty (TKA), and unicondyle knee arthroplasty (UKA) were summarized. The implants from domestic products and imported products were also summarized.

As a result, the manufactures and companies included in this study covered 90% to 95% of all the manufactures who were approved by the National Medical Products Administration to provide artificial joints in the Chinese market. Data from January 2011 to December 2019 were collected, except for the year of 2015, data of which was unavailable for systemic reason.

The result of annual amounts of THA and TKA from 2011 to 2019 in the mainland of China was presented in Figure 1A. The case number of THA increased from 168,040 in year 2011 to 577,153 in year 2019, with a

2.4-fold increase. The case number of TKA increased from 53,880 in year 2011 to 374,833 in year 2019, with a 5.9-fold increase. The case number of UKA increased from 9200 in 2017 to 19,000 in 2019, with a 1.06-fold increase. There were more THA procedures in our county than TKA procedures, however, TKA procedure had a higher annual growth rate than THA procedure in recent years. The UKA accounted for 4.3% to 4.8% of the patients undergoing knee arthroplasty procedure, and also had a significant increase in recent years.

For all the procedures, the ratio of domestic products compared with imported products was 49% in 2011, and increased to 133% in 2019 [Figure 1B]. The domestic products increased more in THA procedure than in TKA procedure from 2011 to 2019.

According to this study, there is a trend of increasing cases of artificial joint replacement in China and almost 0.9 million cases were performed in 2019. Implants from domestic products tend to be more used than imported products. There are more THA cases than TKA cases in our country, which is contrary to the statistics in the United States.<sup>[3]</sup>

Theoretically, the national artificial joint registration system can not only provide the information of how many artificial joint operations are performed each year, but also clinical outcomes, complications, and causes of failure. Although the significance of this study was limited for its deficiency of data than the well-established artificial joint registration in the western country.<sup>[4]</sup> This study was important for its pioneer in artificial joint annual report of our country, and future work to establish China's joint registration system is imperative.

### Conflicts of interest

None.

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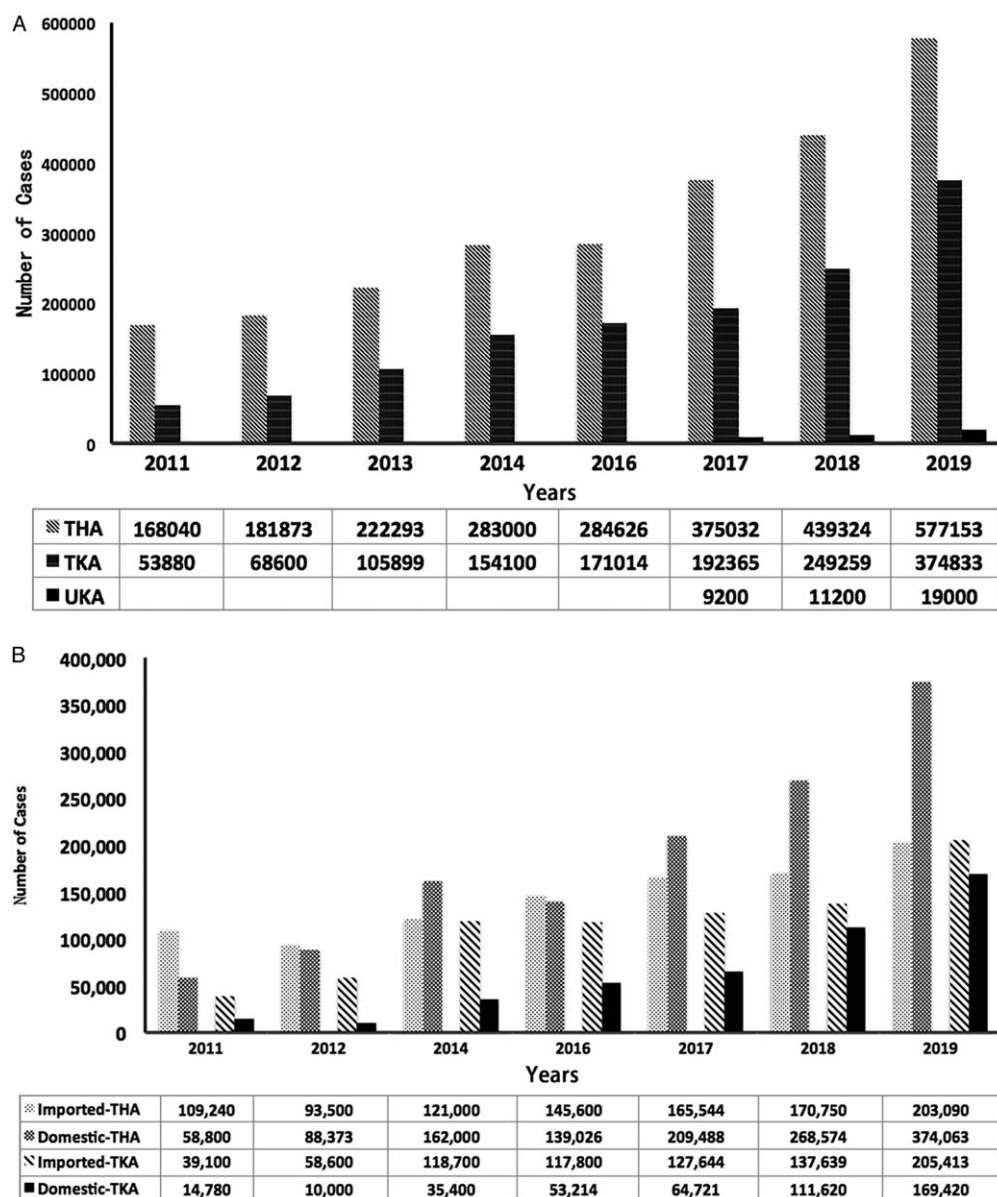
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**Figure 1:** Relevant statistics of artificial joint replacement. (A) Annual statistics of artificial joints from 2011 to 2019 in the mainland of China. (B) Annual cases of THA from domestic products and imported products from 2011 to 2019 in the mainland of China, and annual cases of TKA from domestic products and imported products. THA: Total hip arthroplasty; TKA: Total knee arthroplasty.

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