

## **Pediatric Nephrology in China**

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It was not until 1970s that the subspecialty of pediatric nephrology was initiated on the foundation of general pediatrics in China. In 1977, Cooperation Group on Childhood Renal Diseases was organized by Prof. WANG Bao-lin (Beijing), Prof. JIANG Xin-qiu (Nanjing) and Prof. GUO Yi-qing (Shanghai), which was a milestone for pediatric nephrology in China. Since then, more and more Chinese pediatricians as well as doctors have contributed greatly to organize the society and to take care the children with renal diseases. Nowadays, nearly 400 pediatricians consistently participate in the national activities on pediatric nephrology, among whom the majority was trained especially on the diagnosis and treatment of childhood renal diseases. These doctors come from almost all of the provinces, autonomous regions and municipalities of China and are becoming the key members of Chinese Society of Pediatric Nephrology (CSPN, also named the Subspecialty Group of Nephrology, Society of Pediatrics, Chinese Medical Association). In 2008, a website of CSPN (<http://www.cspn2008.org.cn>) was established in order to strengthen the communication among doctors caring childhood renal diseases and to promote the influence of CSPN.

CSPN was formally founded in 1985 along with other 9 subspecialties among pediatric field by the authority of Chinese Medical Association. CSPN has been guided by several national-wide famous pediatricians as the President, WANG Bao-lin (1979-1991), JIANG Xin-qiu (1991-1997), YANG Ji-yun (1997-2007) and DING Jie (2007-present). Since 1977, there have been 15 national meetings on pediatric nephrology from 1997 to 2012 in an average of 2–3 years interval and several workshops hosted by CSPN. A variety of subjects were focused in each workshop, for instance the classification, diagnosis and treatment of glomerular diseases; hematuria and chronic renal failure; secondary renal diseases and pathogenesis; evidence-based diagnosis and treatment guideline on childhood renal diseases. Over 30 years, hundreds of pediatricians attended these national meetings as well as national workshops from the tertiary hospitals and from the secondary or primary care units. The basic knowledge and the update information on pediatric nephrology or nephrology were given during every national activity. Thus better communication, good friendship and tight relationship among pediatricians from different cities, different hospitals and care units were established to promote the development of subspecialty of pediatric nephrology in China. Nowadays, the subspecialty of pediatric nephrology along with special nephrology unit (out-patient as well as in-patient unit for pediatric nephrology) was set up in most tertiary hospitals in China.

In order to increase the quality of care and standardize the criteria of diagnosis and treatment for pediatric kidney diseases, several versions of consensus or proposal were published in Chinese Journal of Pediatrics, which were produced by a group of well-trained pediatric nephrologists under the guidance of CSPN (Table). Since 2007, a series of guidelines on diagnosis and treatment of childhood renal diseases have been worked on following the principle of evidence-based medicine, which would provide more comprehensive and impersonal references for pediatricians in clinical practice. This work was also organized and conducted by CSPN.

**Table.** Consensus or proposal on childhood kidney diseases

Year	Title
1979	Proposal of clinical classification and treatment of childhood glomerular diseases <sup>1</sup>
1981	Revision on the proposal of clinical classification and treatment of childhood glomerular diseases <sup>2</sup>
1985	Proposal of steroid and immunosuppressive drugs treatment on nephrotic syndrome <sup>3</sup>
1994	Diagnostic criteria of acute renal failure in children <sup>4</sup>
1994	Chinese-English nomenclature comparison on clinical classification of glomerular diseases <sup>5</sup>
2001	Clinical classification, diagnosis and treatment in childhood glomerular diseases <sup>6</sup>
2009	Evidence-based guideline on the diagnosis and treatment of childhood nephrotic syndrome <sup>7</sup>
2009	Evidence-based guideline on diagnosis and treatment of Henoch-Schonlein purpura nephritis <sup>8</sup>
2010	Guideline on diagnosis and treatment of steroid-resistant nephrotic syndrome <sup>9</sup>
2010	Evidence-based guidelines on diagnosis and treatment of childhood common renal diseases (IV) : IgA nephropathy <sup>10</sup>
2010	Guidelines for the diagnosis and treatment of HBV-associated glomerulonephritis <sup>11</sup>
2010	Guidelines for the diagnosis and treatment of lupus nephritis <sup>12</sup>
2010	Guidelines for the diagnosis and treatment of urinary tract infection <sup>13</sup>
2017	Evidence-based guideline for diagnosis and treatment of primary IgA nephropathy(2016) <sup>14</sup>
2017	Evidence-based guideline for diagnosis and treatment of Henoch-Schonlein purpura nephritis(2016) <sup>15</sup>
2017	Evidence-based guideline on diagnosis and treatment of steroid-sensitive, relapsing/steroid-dependent nephrotic syndrome in children(2016) <sup>16</sup>
2017	Evidence-based guideline on diagnosis and treatment of steroid-resistant nephrotic syndrome(2016) <sup>17</sup>
2017	Evidence-based guideline on diagnosis and treatment of urinary tract infection(2016) <sup>18</sup>
2018	Evidence-based guideline on diagnosis and treatment of lupus nephritis (2016) <sup>19</sup>

CSPN played a key role in the collaboration studies on pediatric nephrology national wide. The early cooperation started in 1982, which collected and analyzed 66 562 hospitalized children in the cities of Beijing, Shanghai, Wuhan and Jiangsu province. The study revealed that urinary diseases accounted for 5.2% of overall hospitalized children in the same period including 64.8% of acute glomerulonephritis, 16.3% of nephrotic syndrome, 6% of urinary tract infection and 3.5% of purpura nephritis.<sup>20</sup> Ten years later, the similar study in 326 736 hospitalized children from 21 cities and provinces revealed a changed spectrum on childhood kidney diseases, which showed that urinary diseases accounted for 3.5% of overall hospitalized children in the same period including 37.0% of acute glomerulonephritis and 31.0% of nephrotic syndrome. In 1986, a large scale urinalysis survey in 224 291 healthy children of 2–14 years was conducted by CSPN and performed in 21 cities and provinces, which demonstrated that 0.85% of children was detected with abnormal urinalysis, among them hematuria was the most (49.3%) and acute and deferment glomerulonephritis were the second (9.8%).<sup>21</sup> In 1996, a report on the analysis of renal pathology revealed by renal biopsy in 2315 cases of childhood renal diseases was published.<sup>22</sup> CSPN organized a retrospective study on 1268 hospitalized children with chronic renal failure from 91 hospitals of national wide in 2002, which indicated that the constitutive proportion of chronic renal failure over urinary diseases in hospitalized children increased 4.3 folds from 1990 to 2002. The mean age at the onset of chronic renal failure was at school-age. The main renal diseases

causing chronic renal failure were acquired renal diseases.<sup>23</sup> In 2007, another retrospective study was organized by CSPN, which focused on clinical and pathological manifestations of IgA nephropathy in children and enrolled 1203 cases from 33 hospitals spreading in 3 major cities and 13 provinces. The study revealed an increased trend of IgA nephropathy in renal biopsy children (1.4 folds increase) and about 2.2% of childhood IgA nephropathy with deterioration of renal disease during an average 24.4 months follow-up.<sup>24</sup> Several multicentre and retrospective surveys on therapeutic status for childhood renal diseases were conducted and carried out by CSPN in recent years, which included IgA nephropathy<sup>25</sup>, Henoch-Schonlein purpura nephritis<sup>26</sup>, steroid-sensitive and relapsing/steroid-dependent nephrotic syndrome<sup>27</sup>, and renal replacement therapy in children with chronic renal failure<sup>28</sup>.

The desire of catch-up the international level and activities involved in the international academic communities in the field of pediatric nephrology were growing up year by year, especially since the 21st century. A big and milestone event was hosting the ninth Asian Congress of Pediatric Nephrology in 2005 in Beijing. It was the first time for Chinese pediatric nephrologists to hold an international congress in mainland of China. Asian Congress of Pediatric Nephrology is one of the biggest regional congresses in the field of pediatric nephrology. There were more than 400 participants come from more than 30 countries and regions distributed in Asia, Europe, North America, South America, Africa and Oceania. In the same time, the council meeting of International Pediatric Nephrology Association (IPNA) was also held in Beijing for the first time. In 2013, there was another big event of academic congress in China, that is the 16<sup>th</sup> Congress of the International Pediatric Nephrology Association which was held in Shanghai from August 30 to September 3, 2013. More than 1200 participants from 79 countries attended this congress. In addition, there were several other Firsts in the history of pediatric nephrology in China, the first IPNA approved and financial supported Training Course was held in Beijing in 2003, the first Chinese IPNA fellow was trained in Australia in 2003, the first IPNA training center in China was approved by IPNA in 2010, which is the joint training of Beijing and Hang Kong, the special chapter regarding to the situation of pediatric nephrology in China was published in official textbook of *Pediatric Nephrology* (the second edition) for the first time in 1987. All of these efforts opened a door not only for Chinese doctors to know the outer world, but also for international colleagues to understand the work in China.

Chinese pediatric nephrologists along with their organization, CSPN have made an impressive journey for more than 30 years and are going to take a bright journey in the future.

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