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Review Article

A critical review of recent clinical practice guidelines on management of cryptorchidism

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ABSTRACT

Background/purpose: Limited efforts have been made in assessing the qualities of clinical practice guidelines (CPGs) on cryptorchidism (UDT). This appraisal aims to determine the quality of recent CPGs on the management of UDT.

Methods: After systematic literature search, all English-based CPGs providing recommendations for the management of UDT from 2012 to 2017 were reviewed. Using the AGREE II (Appraisal of Guidelines and Research Evaluation) instrument, eligible CPGs were independently appraised by 5 reviewers. Domain scores were calculated and summarized. Intraclass coefficient (ICC) was used to assess for interrater reliability.

Results: Five CPGs from Agency for Healthcare Research and Quality (AHRQ), American Urological Association (AUA), British Association of Pediatric Surgeons/British Association of Urologic Surgeons (BAPS/BAUS), Canadian Urological Association (CUA), and European Association of Urology/European Society for Pediatric Urology (EAU/ESPU) were assessed. There was a solid agreement (ICC: 0.749) among the 5 reviewers ($p < 0.001$). Most recommendations for diagnostic and treatment approaches were consistent across CPGs. For most guidelines, the domains of 'clarity of presentation,' 'scope and purpose,' 'stakeholder involvement,' and 'rigor of development' were high, while 'applicability' was low.

Conclusion: Most guidelines on UDT score high in the AGREE II domains and have consistent recommendations. To improve the 'applicability' domain, future guidelines should improve on aspects that facilitate implementation of the recommendations.

Type of study: Systematic review.

Level of evidence: V (based on the lowest level of evidence utilized by the assessed guidelines).

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Abbreviations: UDT, Cryptorchidism/Undescended Testis; AHRQ, Agency for Healthcare Research and Quality; AUA, American Urological Association; BAPS, British Association of Pediatric Surgeons; BAUS, British Association of Urologic Surgeons; CUA, Canadian Urological Association; EAU, European Association of Urology; ESPU, European Society for Pediatric Urology.

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Cryptorchidism, or undescended testes (UDT), is a common congenital abnormality of male newborns, affecting up to 0.1% to 4.3% of male newborns [1,2]. 0.8%–1.1% of male newborns have enduring UDT beyond the first 3 months of life that lead to evaluation and treatment as necessary [3]. Moreover, other children can develop secondary or acquired UDT. Owing to risk of infertility and malignancy in particular, most UDTs are managed surgically [4].

Clinical Practice Guidelines (CPGs) have been associated with better outcomes and cost-effective practices for multiple settings [5,6]. Various organizations have published clinical practice guidelines (CPGs) on the management of UDT. Despite the high prevalence of cryptorchidism within pediatric population, there were no efforts to understand whether these guidelines are consistent with each other or to assess the quality and reliability of existing guidelines.

The Appraisal of Guidelines and Research Evaluation (AGREE) II is a 23-item tool targeting 6 quality-related domains to assess the methodological rigor and transparency of guideline development processes [7]. The 6 domains consist of: ‘scope and purpose,’ ‘stakeholder involvement,’ ‘rigor of development,’ ‘clarity of presentation,’ ‘applicability,’ and ‘editorial independence.’ ‘Scope and purpose (items 1–3)’ evaluates the goal of the guideline and how it addresses specific clinical questions and target populations. ‘Stakeholder involvement (items 4–6)’ evaluates whether the views of its envisioned users are represented by the guideline. ‘Rigor of development (items 7–14)’ appraises the methodology and process of formulating recommendations based on best available evidence. ‘Clarity of presentation (items 15–17)’ evaluates how effectively the guideline communicates to readers based on its use of language, structure, and format. ‘Applicability (items 18–21)’ assesses the strategies to improve guideline uptake and the potential barriers/facilitators and resource implications of guideline implementation. Lastly, ‘editorial independence (items 22–23)’ measures the potential biases and conflicts of interests in developing the guideline. Each item is rated on a 7-point scale [7].

The aim of this study was to explore the current quality and variations between recent CPGs related to UDT using the AGREE II instrument (Appraisal of Guidelines, Research, and Evaluation) [7].

1. Materials and methods

This review complied with the PRISMA statement [8]. A methodologist and content experts were consulted before proceeding with the review. We included documents identified as CPGs endorsed by any

international society or government organizations providing recommendations on UDT in the review. All English language based CPGs were assessed. Only the latest version of the CPGs was included in the review. Exclusion criteria included: non-CPG documents (narrative reviews, primary research, training manuals, patient and allied health professional guidelines, and technical guides), CPGs released prior to 2011, having <3 authors involved, and focus on nonpediatric populations.

1.1. CPG search, identification, and screening

A systematic literature search was independently performed by a librarian and a physician reviewer in March 2017. The searched electronic databases included: Scopus, CINAHL (Cumulative Index to Nursing and Allied Health Literature), Cochrane online library, EMBASE, Medline, US AHRQ (Agency for Healthcare Research and Quality), NICE (National Institute for Health and Care Excellence), GIN (Guideline International Network), TRIP (Translate Research into Practice), SIGN (Scottish Intercollegiate Guideline Network).

The comprehensive search strategy included both “MeSH (Medical Subject Heading)” and “free text” protocols. The MeSH terms included: “cryptorchidism,” “clinical protocols,” “consensus development conference,” “consensus development conference as a topic,” “critical pathways,” “guideline,” “guideline as a topic,” and “health planning guidelines.” Free text searches were executed by applying the following terms and their variations and/or combinations in all fields: “cryptorchidism,” “undescended testes,” “critical pathways,” “clinical practice guidelines,” “standards,” “consensus,” and “recommendations.”

1.2. CPG appraisal and summary

A review team consisting of 5 healthcare representatives from different backgrounds (pediatric urology, pediatric surgery, pediatric nephrology, medical trainee) was involved in the evaluation of 5 CPGs from the American Urological Association (AUA), US AHRQ, British Association of Pediatric Surgery/British Association of Urological Surgeons (BAPS/BAUS), Canadian Urological Association (CUA) and European Association of Urology/European Society for Pediatric Urology (EAU/ESPU) [9–13]. To critically appraise CPGs and to maintain consistency, methodology protocol developed with the help of clinical methodologist prior to review was circulated among the reviewers before the review process. Each reviewer used the AGREE II instrument to critically appraise the identified CPGs. All reviewers were also asked to access the

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