

Screening programmes for developmental dysplasia of the hip in newborn infants

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ABSTRACT

BACKGROUND: Uncorrected developmental dysplasia of the hip (DDH) is associated with long term morbidity such as gait abnormalities, chronic pain and degenerative arthritis.

OBJECTIVE: To determine the effect of different screening programmes for DDH on the incidence of late presentation of congenital hip dislocation.

METHODS:

Search methods: Searches were performed in CENTRAL (The Cochrane Library), MEDLINE and EMBASE (January 2011) supplemented by searches of clinical trial registries, conference proceedings, cross references and contacting expert informants.

Selection criteria: Randomized, quasi-randomized or cluster trials comparing the effectiveness of screening programmes for DDH.

Data collection and analysis: Three independent review authors assessed study eligibility and quality, and extracted data.

MAIN RESULTS: No study examined the effect of screening (clinical and/or ultrasound) and early treatment versus not screening and later treatment.

AUTHORS' CONCLUSIONS: There is insufficient evidence to give clear recommendations for practice. There is inconsistent evidence that universal ultrasound results in a significant increase in treatment compared to the use of targeted ultrasound or clinical examination alone. Neither of the ultrasound strategies have been demonstrated to improve clinical outcomes including late diagnosed DDH and surgery. The studies are substantially underpowered to detect significant differences in the uncommon event of late detected DDH or surgery. For infants with unstable hips or mildly dysplastic hips, use of delayed ultrasound and targeted splinting reduces treatment without significantly increasing the rate of late diagnosed DDH or surgery.

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The full text is freely available, for Latin America and the Caribbean, from: <http://cochrane.bvsalud.org/cochrane/main.php?lib=COC&searchExp=Screening%20and%20programmes%20and%20for%20and%20developmental%20and%20dysplasia%20and%20of%20the%20and%20hip%20and%20in%20and%20newborn%20and%20infants&lang=pt> (this link may be temporary)

REFERENCE

- Shorter D, Hong T, Osborn DA. Screening programmes for developmental dysplasia of the hip in newborn infants. Cochrane Database Syst Rev. Cochrane Database Syst Rev. 2011;(9):CD004595.

COMMENTS

Developmental dysplasia of the hip (DDH) encompasses a spectrum of disorders of the hip joint including acetabular dysplasia, hip instability and hip dislocation. Early diagnosis of this condition allows treatment to be implemented in the first weeks of life, thereby decreasing morbidity and potential sequelae. For this reason, in several countries including Brazil, clinical examination of newborns' hips is routinely done. To further decrease the early diagnosis failure rate, some countries like Germany and Austria have implemented universal ultrasound screening programs for all newborns.

The systematic review by Shorter et al. had the aim of determining the effect of different screening programs for DDH on the incidence of late presentation of congenital hip dislocation. Randomized, quasi-randomized and cluster-randomized controlled trials involving newborn infants up to six weeks of age who were screened for DDH, clinically or by means of ultrasound, were the only types of study considered for this review. No studies comparing screening versus non-screening were found. The main outcomes were the incidence of late diagnosed DDH (after the eighth week of life), need for treatment (clinical or surgical), delayed walking, complications (avascular necrosis, osteoarthritis, gait abnormalities, chronic pain and leg length discrepancy) and need for total hip replacement.

Five studies fulfilled the inclusion criteria. Only two studies evaluated unselected infants, and these compared clinical examinations, universal ultrasound or targeted ultrasound as the initial screening for DDH. The remaining studies included newborn infants with clinically unstable hips or those with mild dysplasia seen on early ultrasound, with the aim of comparing immediate treatment with abduction splinting versus delayed treatment guided by ultrasound done between two and eight weeks of age. The authors reported that there were no significant differences between the different groups regarding the incidence of late diagnosed congenital hip dislocation, complication rates or need for surgical treatment. They noted that universal screening had increased the indications for treatment. Similarly, from the studies that included infants with DDH suspected through clinical examinations or ultrasound, a significant reduction in the need for treatment with abduction splinting was noted in the groups for which early treatment was not implemented. These data are in line with the US Preventive Services Task Force (USPSTF)¹ recommendations, which state that there is evidence that 60-80% of the newborn hips that are considered to be clinically suspicious or abnormal regarding DDH in the initial clinical examination, and more than 90% of those with ultrasound abnormalities, can improve spontaneously. However, the true impact and potential risks of a possibly higher treatment rate are not well established.

Based on the studies included, the authors concluded that no clear recommendations can be provided to guide clinical practice. Although some of the studies had relatively large sample sizes, the low rate of events reduced their statistical power. The authors proposed that a clinical trial involving more than 100,000 newborn infants would be required to show whether there is in fact

any clinically significant difference between clinical examination and ultrasound, in screening for DDH.

In our environment, special care should be given to proper training for pediatricians and neonatologists, in order to increase the sensitivity of clinical examinations and hopefully decrease the morbidity caused by late diagnosis of DDH.

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1. US Preventive Services Task Force. Screening for developmental dysplasia of the hip: recommendation statement. *Pediatrics*. 2006;117(3):898-902.