Ultrasound Elastography is Useful for Evaluation of Liver Fibrosis in Children - A Systematic Review

OBJECTIVES:: Adult studies have proven ultrasound elastography as a validated measure of liver fibrosis. This study aimed to review the available literature on ultrasound elastography in children in order to evaluate the ability of the method to distinguish healthy from fibrotic liver tissue and investigate whether cut-off values for liver fibrosis in children have been established. METHODS:: A literature search was performed in MEDLINE, EMBASE, the Cochrane Library and Web of Science to identify studies on ultrasound elastography of the liver in children. Only original research articles in English concerning ultrasound elastography in children with and without liver disease, younger than 18 years, were included. All reference lists of the included articles were hand-searched for further references. RESULTS:: Twenty-seven articles were included. Elastography in children without liver disease was investigated in 14 studies and were comparable to those existing for adults. Twelve studies compared elastography to liver biopsy in children with liver disease and found that cirrhosis was correctly diagnosed, whereas it was more difficult to assess severe fibrosis correctly. For the distinction between no, mild and moderate fibrosis in children with liver disease the method was less accurate. Ultrasound elastography was able to differentiate between children with and without liver fibrosis. In children without liver disease ultrasound elastography showed consistent liver stiffness values comparable to those found in adults. No fibrosis-specific cut-offs were proposed. CONCLUSION:: Ultrasound elastography was able to diagnose cirrhosis, distinguish healthy from fibrotic liver tissue and showed consistent liver stiffness values in children without liver disease.

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