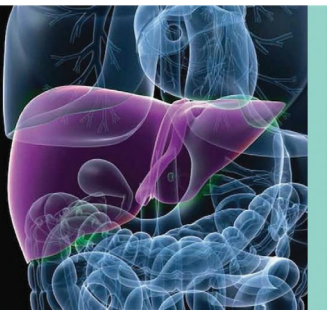

EASL Clinical Practice Guidelines on the Management of Benign Liver Tumors

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In August 2016, the European Association for the Study of the Liver (EASL) published a clinical practice guideline on the management of benign liver tumors. The guideline defines benign liver tumors as "a heterogeneous group of lesions with different cellular origins. Some of these lesions are of greater clinical relevance than others, and the aim of these recommendations is to provide a contemporary aid for the practical diagnosis and management of the more common benign tumors. These include haemangiomas, focal nodular hyperplasia (FNH) and hepatocellular adenoma (HCA)."[1] The guideline includes a summary of epidemiological data, pathology, pathophysiology and natural progression, radiological features, and diagnostic criteria, as well as recommendations for management. The boxed recommendations and modified introduction have been included.

After the discovery of a liver nodule, investigation is necessary to evaluate for conditions associated with liver lesions. In addition to considering chronic liver diseases, history should include medication review, travel history, and family history. Contrast-enhanced (CE) imaging should be done to characterize the lesion. This could include CE ultrasound (CEUS), computed tomography (CT), and magnetic resonance imaging (MRI). MRI is preferable as a first-line assessment when a benign lesion is suspected. A possible malignancy must be excluded. If there is any doubt, the guideline recommends considering biopsy, but only after consideration by an experienced multidisciplinary team (MDT).

Abbreviations: CE, contrast-enhanced; CEUS, contrast-enhanced ultrasound; CT, computed tomography; EASL, European Association for the Study of the Liver; FNH, focal nodular hyperplasia; HCA, hepatocellular adenoma; MDT, multidisciplinary team; MRI, magnetic resonance imaging.

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RECOMMENDATIONS

The Benign Liver Tumour Multidisciplinary Team

The team should be one with expertise in the management of benign liver lesions and should include a hepatologist, a hepatobiliary surgeon, diagnostic and interventional radiologists and a pathologist. Each member of the team must hold specific and relevant training, expertise and experience relevant to the management of benign liver lesions. The team should be one with the skills required not only to appropriately manage these patients, but also manage the rare but known complications of diagnostic or therapeutic interventions.

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Hepatic Haemangiomas

- In patients with a normal or healthy liver, a hyperechoic lesion is very likely to be a liver haemangioma. With typical radiology (homogeneous hyperechoic, sharp margin, posterior enhancement, and absence of halo sign) in a lesion less than 3 cm, ultrasound is sufficient to establish the diagnosis (*evidence level II-2, grade of recommendation 1*)
- In oncology patients or those with underlying liver disease, contrast enhanced imaging (CEUS, CT or MRI) is required (*evidence level II-2, grade of recommendation 1*)
- The diagnosis by contrast enhanced imaging is based on a typical vascular profile characterized by peripheral and globular enhancement on arterial phase followed by a central enhancement on delayed phases. MRI provides additional findings such as lesion signal on T1-, T2- weighted sequences, and diffusion imaging (*evidence level II-2, grade of recommendation 1*)
- Due to its benign course, imaging follow-up is not required for typical haemangioma (*evidence level II-2, grade of recommendation 1*)
- Pregnancy and oral contraceptives are not contraindicated (*evidence level III; grade of recommendation 2*)
- Conservative management is appropriate for typical cases (*evidence level II-2, grade of recommendation 1*)
- In the presence of Kasabach-Merrit syndrome, growing lesions or lesions symptomatic by compression - refer to benign liver tumour MDT (*evidence level III, grade of recommendation 1*)

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Focal Nodular Hyperplasia

- CEUS, CT, or MRI can diagnose FNH with nearly 100% specificity when typical imaging features are seen in combination (*evidence level II-2, grade of recommendation 1*)
- MRI has the highest diagnostic performance overall. The highest diagnostic accuracy by CEUS is achieved in FNH less than 3 cm (*evidence level II-2, grade of recommendation 1*)
- For a lesion typical of FNH follow-up is not necessary, unless there is underlying vascular liver disease (*evidence level III, grade of recommendation 2*)
- Treatment is not recommended (*evidence level II-3, grade of recommendation 2*)
- If imaging is atypical, or the patients is symptomatic, refer to a benign liver tumour MDT (*evidence level III, grade of recommendation 1*)

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Hepatocellular Adenoma

- MRI is superior to all other imaging modalities and due to its intrinsic properties to detect fat and vascular spaces it offers an opportunity to subtype HCA up to 80% (*evidence level II-2, grade of recommendation 1*)
- The positive identification of HNF-1α HCA or inflammatory HCA is achievable with MRI with >90% specificity. By contrast, identification of β-catenin activated HCA and its distinction with unclassified HCA and hepatocellular carcinoma is not possible by any imaging technique (*evidence level II-2, grade of recommendation 1*)
- Treatment decisions are based on gender, size and pattern of progression (*evidence level III, grade of recommendation 2*)
- Upon HCA diagnosis, lifestyle changes such as discontinuation of OCP as well as weight loss should be advised (*evidence level II-2, grade of recommendation 1*)
- HCA resection is recommended irrespective of size in men and in any instance of proven β-catenin mutation (*evidence level II-3, grade of recommendation 2*)

- In women, a period of 6 months observation after lifestyle change is advised and resection is indicated for nodules equal or greater than 5 cm and those continuing to grow (*evidence level II-3, grade of recommendation 2*)
- In women, lesions less than 5 cm should be reassessed at 1 year, and annual imaging adopted thereafter (*evidence level III, grade of recommendation 2*)
- A bleeding HCA with haemodynamic instability should be embolized and residual viable lesion on follow-up imaging is an indication for resection (*evidence level III, grade of recommendation 2*)

Management of Multiple Lesions

- The management of patients with multiple HCA should be based on the size of the largest tumour (*evidence level III, grade of recommendation 2*)
- Hepatic resection might be considered in unilobular disease, and in those cases with more widespread HCA, resection of the largest adenomas may be an option (*evidence level III, grade of recommendation 2*)
- Liver transplantation is not recommended in multiple HCA, but might be considered in individuals with underlying liver disease (*evidence level III, grade of recommendation 2*)

Please listen to Dr. Columbo discuss the important updates and impact on patient management from this publication.

REFERENCE

1) European Association for the Study of the Liver (EASL). EASL Clinical Practice Guidelines on the management of benign liver tumours. J Hepatol 2016;65:386-398.