Editorial

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Toward the introduction of Contrast Enhanced Ultrasound as first line diagnosis in Focal Liver Lesions

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Despite the late introduction of Contrast Enhanced Ultrasound in Romania (due to the late arrival of SonoVue on the Romanian market), this method has largely spread in many centers during the last two years. In Romania, most centers involved in CEUS evaluation are clinical medical centers and only a few are Radiology departments.

I shall try to present the point of view of a clinician (a gastroenterologist) regarding the use of CEUS. In the past, it was common for me to find numerous focal liver lesions (FLL) in healthy individuals, in patients with oncologic diagnoses or with liver cirrhosis, since I was performing many ultrasound examinations daily. The question was what to do with these lesions, for their correct characterization? The answer was to send the patient to a Radiology department for contrast enhanced computer tomography (CE-CT) or contrast enhanced magnetic resonance imaging (CE-MRI). This meant waiting time and stress for the patients, before reaching the final diagnosis.

In the last period, after CEUS was introduced in daily practice in our department, immediately after a FLL is discovered, CEUS examination is performed, and in less than 5 minutes (the duration of vascular pattern evaluation in FLL), we have the final diagnosis.

But now, the question that arises is if CEUS is accurate enough to replace (at least partially) other imaging methods, such as CE-CT and CE-MRI. To answer this question we will use some recently published papers in well-known and recognized journals (1, 2). A very recent paper presented data from the multicentre German study, performed by DEGUM. This study compared CEUS to CE-MRI for FLL evaluation, the conclusion of this trial being that "CEUS and MRI are of equal value for the differentiation and specification of newly discovered liver tumors in clinical practice. There were no statistically proven differences between CEUS and MRI" (1). On the other hand, in a paper accepted for publication from our group (3), we showed that CEUS was conclusive for the final diagnosis in approximately 80% of cases and was able to differentiate between benign and malignant FLL in approximately 90% of cases.

Furthermore, all European healthcare systems are confronted with financial problems, due to the increasing costs of medical activity. Thus, in all healthcare systems the medical costs should be lowered in order to be cost-effective. A recently published paper (2) analyzed the cost of CEUS in comparison with other imaging modalities for the diagnosis of FLL, and the conclusion of this study was that: "CEUS was the most cost-effective method in all scenarios in which CEUS examinations were performed at specialized centers (122-186 Euros), compared to CE-CT (223 Euro). A cost-covering realization of CEUS can result in cost savings in the German healthcare system". We reached quite the same conclusion in a study performed in our department, published in the current number of Medical Ultrasonography (4).

Considering the comparable results of CEUS evaluation to those of CE-MRI for FLL evaluation (recently proved by the German multicentre study) and the results of a second German study, which showed that CEUS is more cost-effective as compared with CE-CT when performed in specialized centers, we think that we can propose CEUS to be the first line imaging method when confronted with a newly discovered FLL on ultrasound. Also, since several centers from Romania (such as Timisoara, Cluj, Craiova, Constanta or Bucharest), already have a good experience in CEUS, with a large number of examinations in various liver diseases, we are entitled to

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believe that this is the moment to introduce CEUS as the first line imaging method for FLL diagnosis.

The duty of our society (SRUMB) is to try to implement this concept in our daily practice, in every medical center, in order to decrease the medical costs of FLL evaluation.

References

1. Seitz K, Bernatik T, Strobel D, et al. Contrast-Enhanced Ultrasound (CEUS) for the Characterization of Focal Liver Lesions in Clinical Practice (DEGUM Multicenter Trial): CEUS vs. MRI - a Prospective Comparison in 269 Patients. Ultraschall Med 2010; 31: 492-495.
2. Giesel FL, Delorme S, Sibbel R, Kauczor HU, Krix M. Contrast-enhanced ultrasound for the characterization of incidental liver lesions - an economical evaluation in comparison with multi-phase computed tomography. Ultraschall Med 2009; 30: 259-268.
3. Sporea I, Şirli R, Martie A, Popescu A, Dănilă M: How useful is Contrast Enhanced Ultrasound for the characterization of Focal Liver Lesions? J Gastrointestin Liver Dis *In press*
4. Şirli R, Sporea I, Martie A, Popescu A, Dănilă M: Contrast enhanced ultrasound in focal liver lesions – a cost efficiency study. Med Ultrason 2010: 4: 280-285.