Editorial

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Why isn't Contrast Enhanced Ultrasound for Focal Liver Lesions used more in daily practice?

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Contrast Enhanced Ultrasound (CEUS) was introduced in clinical practice more than 10 years ago, first, using Levovist (a first generation US contrast agent) and later SonoVue (a second generation US contrast agent). The European Federation of Societies for Ultrasound in Medicine and Biology (EFSUMB) published several guidelines and recommendations regarding the use of US contrast agents (in 2004, 2008, and 2012) [1-3] and large cohorts of patients were evaluated by CEUS in the DEGUM and STIC studies [4,5], with good results. Also, a multicentre national Romanian study was published showing the practical value of this method [6].

Thus, considering all the above, the question is why isn't CEUS used more in daily practice in Romania for focal liver lesion (FLL) evaluation? There are many explanations! Despite the fact that there are trained specialists able to perform this method, there is still a problem with the availability of SonoVue in those hospitals. In many centers, CEUS is not covered by insurance, so that the patients' access to this procedure is limited (contrast is obtained through research resources). In other centers this method is covered by insurance in daily hospitalization or is performed for inpatients. The big advantage of CEUS performed by clinicians is the fact that the examiner knows the clinical scenario and thus can set the questions to which this method has to give an answer. From previously published papers we found out that in 90% of cases CEUS is able to decide between the malignant or benign nature of a FLL [4-7], while in 80-85% of cases CEUS can accurately diagnose the type of lesion (hemangioma, metastasis, focal nodular hyperplasia, etc). All this, without moving the patient from the ultrasound room, and with no waiting time (CEUS is performed immediately after the standard ultrasound examination which finds the FLL and the result is available in less than 10 minutes).

Another aspect is the safety of CEUS. US contrast agents are very safe, only very few mild allergic reactions have been described in a cohort of more than 20.000 patients [8]. In comparison, CT contrast agents are known to cause much more frequent allergic reactions and sometimes acute kidney failure. Also, CEUS is not very expensive! Usually, only a half vial of SonoVue is used, at a cost of approximately 35 Euros.

Another explanation can be the unavailability of ultrasound machines able to perform CEUS! I believe that in many public and private hospitals, high-end ultrasound machines are used for other purposes (cardiology, obstetrics, or urology) and therefore, acquiring the contrast module should not be a problem since it is not very expensive.

In Romania we have the advantage that ultrasound examination is performed in many cases by the clinicians, and they are also the practitioners who discover FLLs. But we must change our outlook in the future to be more cost/efficient in daily practice! Since we can obtain a correct and rapid diagnosis with CEUS, then we should start with this method! Large multicentre studies [9,10] and meta-analyses [11,12] have proved the non-inferiority of CEUS as compared to contrast enhanced CT and contrast enhanced MRI for the diagnosis of FLLs, provided that the lesion is well seen in standard ultrasound. Thus, only if the CEUS is inconclusive, we should perform other sectional imaging methods (more expensive and often incurring awaiting time for our patients).

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Of course, standard ultrasound and CEUS are operator dependent methods and need experienced operators to improve accuracy. In Romania there are centers with extensive experience in CEUS, where practitioners who want to learn this method are welcomed for training.

Thus, my proposal for level II or III ultrasonographists (according to EFSUMB/SRUMB levels of performance) is to start using CEUS in daily practice, as a first line imaging method for the diagnosis of FLLs discovered by standard ultrasound, immediately after the initial examination. This strategy will reduce the cost of the final diagnosis, the waiting time, and probably the stress for the patient. We must convince the hospital managers regarding this method's advantages and try to use CEUS not only in university hospitals, but also in county hospitals. In my opinion, CEUS should pass from the research phase to implementation in daily practice nowadays, since it is able to answer accurately, inexpensively, and rapidly a clinical question.

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