

Application of Ultrasound in the Clinical Practice of Primary Health Care. Will Ultrasound Replace the Stethoscope?

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The letter to the editor was created in response to an article published in The New Yorker magazine entitled "Could Ultrasound Replace the Stethoscope?" (1). In clinical practice, ultrasound is widespread in almost all medical specialities. After numerous studies on the benefits of ultrasound diagnostics (US), the indications for ultrasound were expanded, and intensive training of doctors of all specialities was started. At the beginning of this year, the book "Atlas of abdominal ultrasound diagnostics" was published by prof Slavica Beneš-Mirič, which can be very useful to all specialists, especially doctors in primary health care. The improved technical capabilities of US and research from practice have shown that ultrasonography can have significant advantages, but only in combination with all physical methods of patient examination.

There were controversies about the value of ultrasound at the primary health care level since, initially, ultrasonography was reserved for secondary and tertiary levels of health care. Research, practice and education are tightly connected, so there is evidence of the great advantage of the simultaneous application of all methods of physical examination and US.

The use of US in medicine began during World War II. Although there are data on the use of the US in medicine in an earlier period (USA and Japan), Professor Ian Donald from Glasgow (1956) is considered to pioneer the practical use of US in medical practice.

From the middle of the 50s, continuous and vigorous technical training began, along with equipment and intensive application of this imaging method in practice with appropriate educational courses.

Postgraduate courses in ultrasound diagnostics in Bosnia and Herzegovina began in 1998. Most of the participants of this course were primary health care physicians.

Up to 2016, 40 courses were held with 479 participants. The participants were doctors

of various specialities, of which there were 16 paediatricians and 40 emergency physicians. The participants were from 35 cities throughout Bosnia and Herzegovina. In addition to abdominal US courses, 20 breast, small organ and echocardiography courses were held with 153 participants.

The importance of ultrasonography was quickly realized in emergency medicine. The term emergency US was introduced in 1997 by the American college of emergency physicians (ACEP).

An emergency physician performs ultrasonography at the patient's bedside to answer clinically focused ques-



Figure 1. Participants of the first diagnostic sonography course in Bosnia and Herzegovina

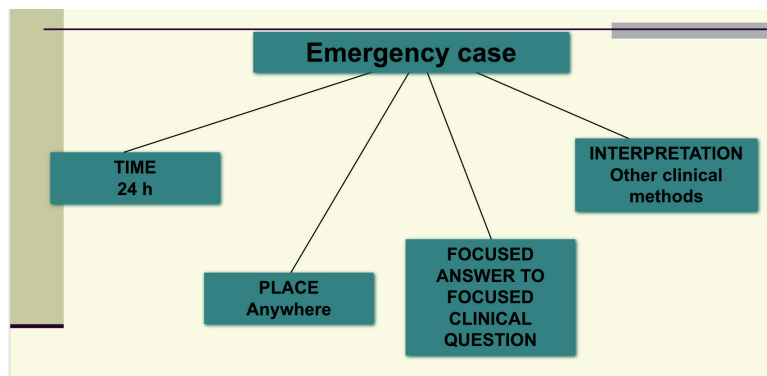


Figure 2. Emergency ultrasonography in primary healthcare



Figure 3. Ultrasound diagnostics in primary health care. The etiological diagnosis was established adequately in the first contact with the patient.

tions (2). As part of the ultrasound school in Tuzla, a specific educational module structured to acquire practical skills was introduced (3)

The benefits of using ultrasonography in primary health care are numerous. US improves patient health care, saves time, reduces cost, improves patient satisfaction, avoids long waits for routine diagnostic procedures and saves a life (4).

In many health centres in Tuzla county, ultrasound devices are located in emergency rooms, family medicine clinics, and pediatric dispensaries. Ultrasound technicians are former students of postgraduate ultrasound courses in various specialities. In the hospital, emergency ultrasonography is performed as part of the first admission clinical examination.

The use of ultrasound in primary health care is legally regulated (5).

Using ultrasound in primary health care is principal from a public health perspective, considering the advantages for many patients and savings for the health system. Studies on the social significance of US in practice have shown that family medicine teams that use US in the first contact with the patient make savings for health systems and improve the quality of health services and patient satisfaction (3, 6-14).

There is no doubt about the importance of US in clinical practice. Ultrasound is becoming a necessary diagnostic tool at all levels of health care. New possibilities of ultrasound diagnostics with improved resolution, artificial intelligence and remote diagnostics bring new ultrasonography values. Will ultrasound replace the stethoscope? The stethoscope is an essential, routine and irreplaceable diagnostic tool in the daily work of primary care physicians. Physical examination methods are the basis of good clinical practice. Ultrasonography is a complementary method to confirm or reject a clinical opinion. These two methods are not competitive but are self-complementary and irreplaceable in good clinical practice. Ultrasound is a visual stethoscope with many more possibilities.

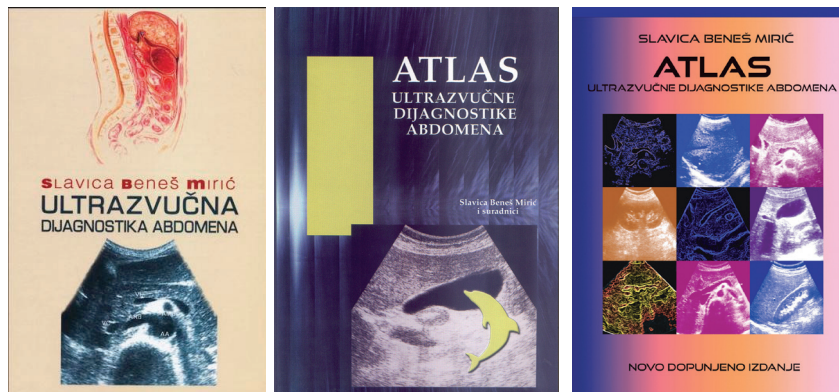


Figure 4. Educational material used during the abdominal ultrasound diagnostics course

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