

Musculoskeletal ultrasonography in Romania – Results from a specific questionnaire

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Abstract

Musculoskeletal ultrasonography (MSUS) is currently used in daily medical practice, as an extension of the clinical examination. The development of training programmes for MSUS has increased the interest of physicians from different specialties in performing this exploration. We realized a survey in order to describe the current practice of MSUS in Romania, as well as determining physicians' preferences for MSUS training implementation. **Methods:** In 2010, 196 questionnaires were completed and returned at two congresses in Romania. **Results:** Most of the participants were rheumatologists and radiologists, followed by physical medicine and rehabilitation doctors, internal medicine doctors, general practitioners and other specialists. 41% of respondents practice MSUS themselves. Doctors use MSUS as a diagnostic tool (95%) and for monitoring diseases (75%). Lack of training and lack of MSUS competence were the main reasons for not performing MSUS. The respondents expressed their preference for future training to be via a programme of regular, intensive courses and active participation in clinics where MSUS is performed. Most of the participants consider mentoring the assesment method of choice. **Conclusion:** The majority of participants in this survey use MSUS in the management of their patients. The results indicate participants' preferences on how training should be delivered in the future.

Keywords: musculoskeletal ultrasonography, survey, training

Rezumat

Ecografia musculoscheletală (EMS) este utilizată tot mai mult în practica zilnică, fiind o extensie a examenului clinic. Dezvoltarea programelor de învățare a EMS a crescut interesul medicilor din diverse specialități în practicarea acestei explorări. Am realizat un sondaj pentru a evidenția practica EMS în România, precum și modul în care se dorește a fi învățarea EMS. **Metode:** În decursul anului 2010, 196 chestionare au fost completate și returnate de către participanții la două manifestări științifice care au avut loc în România. **Rezultate:** Cei mai mulți dintre participanți au fost medici reumatologi și radiologi, urmând medici de medicină fizică, recuperare și balneofizioterapie, interniști, medici de familie și de alte specialități. 41% dintre intervievați practică EMS. Cel mai frecvent EMS este indicată în scop diagnostic (95%) și de monitorizare (75%). Lipsa experienței și lipsa competenței în EMS au fost principalele motive pentru nepracticarea EMS. Programul de training se dorește a fi realizat prin cursuri regulate, intensive, prin participare activă în clinici unde se efectuează EMS. Aprecierea competenței de către mentori este considerată ca fiind cel mai bun mod de obținere a competenței. **Concluzii:** Dintre participanții la acest sondaj, majoritatea utilizează EMS în managementul pacienților. Rezultatele indică preferințele legate de modul în care s-ar putea desfășura programul de învățare în viitor.

Cuvinte cheie: ecografie musculoscheletală, sondaj, program de învățare

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Introduction

Musculoskeletal ultrasonography (MSUS) is increasingly being undertaken by rheumatologists in daily medical practice to aid patient management. Beside extending physical examination, it is also important in the reasearch field. MSUS may help the physician in achieving a more accurate diagnosis, better therapeutic decisions, enhanced understanding of the physiopathol-

ogy of rheumatic diseases as well as an objective measure in clinical outcomes research [1,2]. The ultrasound teaching school is developing fast in many countries [3]. The „European League Against Rheumatology” (EULAR) has coordinated many MSUS courses in Europe in the last years [4]. The current experts in MSUS have trained using combination of short courses, self-teaching, mentoring programmes, as well as electronic learning [3-6]. An expert consensus-defined educational framework was proposed by Brown *et al* in order to provide a template for teaching and learning, but also standards for competency assessment [7-8]. On the other hand, the lack of a uniform training curriculum or a consensus of competency standards limit the more widespread use of MSUS in rheumatology [5]. Although preliminary guidelines for training have been elaborated, there is still need for standardization across Europe [4,8-10]. Recently, the first American informed curricula and guidelines for MSUS were published [11].

Progress has been made in Romania in the last years by incorporating MSUS into the rheumatology training curriculum. National courses and clinical symposiums focused on MSUS are yearly performed. Despite all this, the number of doctors performing MSUS in daily medical practice is still low, probably due to the lack of an uniform training curriculum, a standardized way of assessment, increased cost of the equipment, lack of time and other causes.

Methods

We realized a survey in order to describe the current practice of MSUS in Romania, by different specialists, as well as to determine physicians’ preferences for MSUS training implementation.

A questionnaire was designed to obtain this information. 196 specific questionnaires were completed and returned at two congresses in Romania in 2010: „Imagistics in Rheumatology” (Cluj-Napoca) and „Euroson School-Musculoskeletal Ultrasonography” (Sibiu). There were 19 questions single-choice or multiple-choice questions included in each questionnaire.

Statistical analysis was performed using SPSS 13.0 and Microsoft Excel.

Results

Demographics

The age distribution shows that most of the participants were between 30-50 years old. The majority were female. Doctors from all over the country participated in this survey, most of them coming from Bucharest (46),

Cluj (41), Iași (16), Mureș (15), Dolj (10). The majority were rheumatologists, followed by radiologists, physical medicine and rehabilitation doctors (PMR), internal medicine doctors, general practitioners (GP) and other specialists. Most of the participants worked in hospitals (140/196), but almost half also worked in private clinics (93/196).

Current practice

Table I shows the distribution of respondents, regarding their specialties, their use of MSUS and levels of experience in performing MSUS. Regarding the level of experience in performing MSUS, 41% of respondents practice MSUS, 18% have less than 1 year experience, while only 8% have more than 5 years’ experience. Out of 196 respondents, 87% said they use MSUS imaging in the management of their patients. Most of the respondents refer their patients to rheumatologists (81/196) or to radiologists (72/196) for MSUS examination. 30% of the participants are not influenced by being paid for MSUS examination in the private clinic, 15% are significantly influenced, 19% of the respondents did not answer this question.

Table I. The distribution of respondents, regarding their specialties, their use of MSUS and levels of experience in performing MSUS.

| | No of participants (% of total) | Not using MSUS | Duration of MSUS training (No of participants) | | |
|-------------------|---------------------------------|----------------|--|-----------|-----------|
| | | | 0-1 years | 2-5 years | > 5 years |
| Rheumatologists | 65 (33%) | 42 | 12 | 6 | 5 |
| Radiologists | 33 (17%) | 11 | 12 | 8 | 2 |
| Internal medicine | 24 (13%) | 16 | 2 | 3 | 3 |
| PMR | 23 (12%) | 17 | 2 | 3 | 1 |
| GP | 20 (10%) | 12 | 2 | 4 | 2 |
| Other specialists | 28 (14%) | 16 | 5 | 4 | 3 |
| Not specified | 3 (1%) | 2 | 1 | - | - |

Doctors use MSUS as a diagnostic tool and for monitoring diseases; MSUS is less used to guide injections and for research purposes (fig 1). Peripheral joints are examined, particularly the hands, scapulohumeral and knee joints, to assess joint and soft tissue inflammation (fig 2). The small joints of the hand were much more frequently evaluated by Rheumatologists, compared to radiologists ($p=0.0007$) as well as the shoulder ($p=0.01$). Synovitis and tenosynovitis were the most common findings on

US, followed by soft tissue tumors, bone erosions, enthesitis, cartilage damage (fig 3). Tenosynovitis was more frequently diagnosed by rheumatologists ($p=0.0002$), whereas soft tissue tumors being more frequently found by radiologists ($p=0.03$).

The majority of the respondents were significantly (45%) or moderately (41%) prone to choosing the first treatment according to the MSUS result, as well as to changing therapies over time (39% vs 42%).

Education and training

Lack of training (52%) and lack of MSUS competence (47%) were the main reasons for not performing MSUS. 54% of the participants had some training in MSUS. The most common forms of training undertaken were attending courses, especially national courses (62/196), other courses (34/196), or via training curriculum (31/196).

Respondents were asked who they thought should train doctors in MSUS. 102/196 of respondents thought it would be always appropriate for radiologists to teach MSUS, whereas 135/196 thought that rheumatologists should teach MSUS. Respondents were then asked how training should be done. Most of them chose the combination of regular training courses (122/196), intensive courses (111/196) as well as attending at clinics where MSUS was currently performed (142/196). Most of the participants considered mentor appraisal the assessment method of choice (48%), followed by national contests (35%) and portfolios (12%). The results showed that mentoring programmes and courses were the most useful educational tools, followed by books, DVDs, journals and web pages (fig 4).

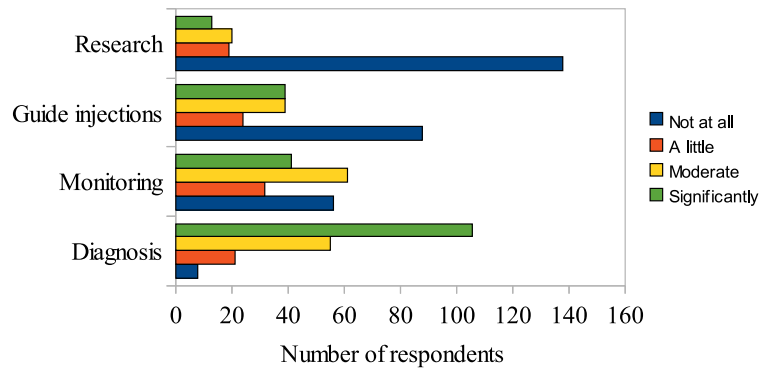


Fig 1. The use of MSUS for different purposes among all respondents (performing MSUS or referring for MSUS)

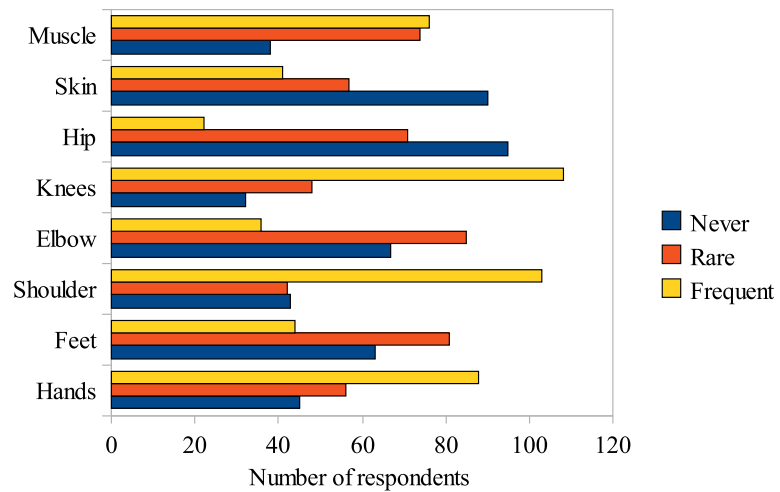


Fig 2. The different uses of MSUS among all the respondents (performing MSUS or referring for MSUS)

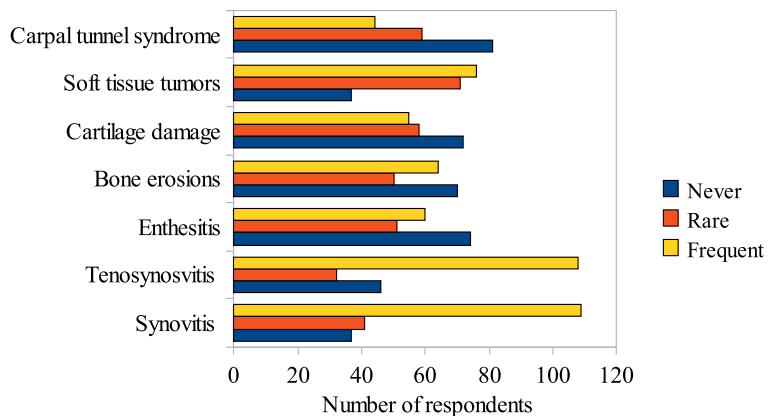


Fig 3. The number of respondents who indicate frequency of the following abnormalities diagnosed using MSUS

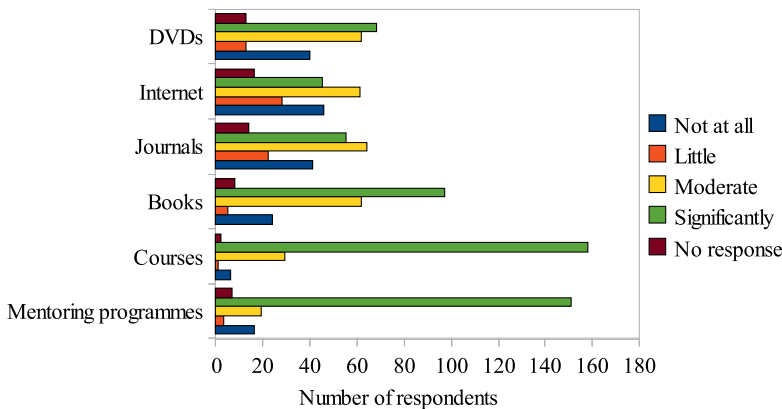


Fig 4. The number of respondents indicating the distribution of the importance of six educational tools in MSUS training

Discussion

Many studies have been published evaluating either teaching and training aspects, standards of practice for rheumatologists, especially based on the European experience [12,13,15,16]. This is the first study describing the current practice and training of MSUS in Romania. The present questionnaire was divided into three sections: demographics, current practice, education and training. The majority of respondents expressed their interest in performing MSUS, evident by the fact that 41% had already used it in daily clinical practice. This number may be an overestimate due to sampling bias, knowing that the questionnaire was distributed at imaging-related congresses.

Rheumatologists and radiologists performed or were almost equally asked to perform MSUS, more frequently than other specialists. The results showed that respondents usually scanned larger joints - shoulder and knee, followed by small joints of the hand. The small joints of the hand as well as the shoulder were much more frequently evaluated by rheumatologists, compared to radiologists. We also observed significant differences between the two specialties regarding the most frequent findings on MSUS examination. Tenosynovitis was more frequently diagnosed by rheumatologists whereas soft tissue tumors were more frequently examined/diagnosed by radiologists. A consensus between rheumatologists and radiologists exists in some areas, but there are still differences of opinion between them concerning MSUS indications relevant to each specialty [13].

This survey revealed that MSUS was used to a lesser extent for guided aspirations/ injections as well as for research purposes. This may again reflect a limited ex-

perience in performing MSUS in Romania. An important number of participants were influenced by the MSUS result in choosing the first treatment for arthritis or in changing therapies over time, suggesting the importance of MSUS in the management and follow-up of arthritic patients.

Regarding education and training, this survey highlighted some issues. The most frequent forms of training undertaken were national courses or via training curriculum. Only a few participants followed MSUS international courses. Some authors consider that training MSUS is probably better delivered

at the postgraduate level. On the other hand, formal MSUS training should be a part of the medical residency, given the number of different joint conditions managed by other specialists than rheumatologists [13,14]. Since the inclusion of MSUS training in the rheumatology training curriculum in Romania, the interest of young doctors in using this tool has significantly improved.

The existing guidelines for MSUS suggest that training should be addressed in a modular approach, given the wide range of pathologies and the differences between specialties using MSUS [5,17]. According to this study, respondents chose a combination of regular training courses, intensive courses as well as mentoring programmes for future training. A combination of regular training sessions and short intensive courses has been successfully used by the Ultrasound School of the Spanish Society of Rheumatology [3].

The majority of the participants in this survey consider that appraisal is necessary. They expressed a preference for mentor appraisal and national contests, and less for portfolios.

Our study revealed that lack of training and lack of MSUS competence were the main reasons for not performing MSUS. It is suggested that assessment of competency in MSUS should be flexible, so that trainees can obtain competency in areas used in their daily clinical practice [13]. Respondents also expressed their options for a list of educational tools, mentoring programmes and courses being the most preferred ones.

More comprehensive guidelines will be necessary to standardize training across Europe, as well as to establish specific competency based learning outcomes for rheumatologist ultrasonographers [10,15,16].

Conclusion

Most of the participants in this survey used MSUS in the management of their patients, with more than a third performing MSUS themselves. Lack of training and lack of MSUS competence were the main given reasons for not performing MSUS. The respondents to this questionnaire expressed their preference for future training to be via a programme of regular courses combined with attending at MSUS-based clinics.

We have no doubt that MSUS is an important tool for rheumatologist. To ensure success in MSUS training and in order to become a competent ultrasonographer, constant practice under mentor guidance is definitely required.

Disclosure The authors have declared no conflicts of interest.

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