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CONSENSUS DOCUMENT

Spanish Society of Intensive and Critical Care Medicine and Coronary Units (SEMICYUC) and the Spanish Society of Pediatric Intensive Care (SECIP) consensus recommendations for ECMO transport☆

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Abstract The evolution of extracorporeal membrane oxygenation treatment and the transport of patients receiving this treatment has changed dramatically in the last decade unevenly in different regions. The creation of specialized referral centers has been shown to improve outcomes. For all these reasons, it has been necessary to create networks of specialized teams and the number of secondary transports of patients with this treatment is increasing. In order to improve the quality of treatment and offer a guide to the services involved in these transports, the critical transport working groups of the Spanish Society of Intensive and Critical Care

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Extracorporeal life support;
ECMO retrieval

Medicine and Coronary Units (SEMICYUC) and the Spanish Society of Pediatric Intensive Care (SECIP) have carried out a joint effort to prepare these recommendations, focused on the following aspects: indications, reference center systems, means of transport, characteristics and equipment, human teams, training and clinical safety.

PALABRAS CLAVE
Oxigenación por membrana extracorpórea;
Transporte en ECMO;
ECMO móvil;
Soporte vital extracorpóreo

Recomendaciones de consenso sobre el transporte de pacientes en ECMO de la Sociedad Española de Medicina Intensiva, Crítica y Unidades Coronarias (SEMICYUC) y la Sociedad Española de Cuidados Intensivos Pediátricos (SECIP)

Resumen La evolución del tratamiento de oxigenación por membrana extracorpórea (ECMO) y en particular del transporte de los pacientes sometidos a él, ha cambiado de forma significativa en la última década y lo ha hecho de manera desigual en diferentes regiones. Se ha demostrado que la creación de centros de referencia especializados mejora los resultados. Por todo ello ha sido necesario crear redes de equipos especializados y el número de transportes secundarios de pacientes con este tratamiento está en aumento. Con el fin de mejorar la calidad del tratamiento y ofrecer una guía para los servicios que intervienen en estos transportes, los grupos de trabajo de transporte crítico de la Sociedad Española de Medicina Intensiva, Crítica y Unidades Coronarias (SEMICYUC) y la Sociedad Española de Cuidados Intensivos Pediátricos (SECIP) han realizado un trabajo conjunto de elaboración de estas recomendaciones, enfocadas a los siguientes aspectos: indicaciones, sistemas de centros de referencia, medios de transporte, características y equipamiento, equipos humanos, formación y seguridad clínica.

Introduction

Transportation of critically ill patients on extracorporeal membrane oxygenation (ECMO) started in a few reference centers over 30 years ago, but there has been an exponential growth since 2009, the year when the influenza A pandemic consolidated this therapy to fight against severe heart failure.[1] Thanks to the technological advancements made with ECMO devices and the specialization of health professionals, ECMO has extended its applications to other situations like cardiogenic shock, cardiorespiratory support as a bridge therapy to heart or lung transplantation, cardiac arrest or organ donor support in Maastricht type III patients.[2]

Resource centralization with the creation of reference centers specialized in ECMO support has improved the results regarding survival by providing better safety and cost-efficiency. Therefore, to guarantee universal access to ECMO therapy transportation among different hospitals is required. In patients in need, not starting ECMO support prior to transportation is associated with higher morbidity and mortality rates.[3] Still, high risks are associated with ECMO transportation for the patient. According to a study published by the Karolinska University Hospital (Stockholm, Sweden), severe complications have been reported in up to 20% of transportations under 3 h and in up to 45% of aerial transportations over 3 h. However, transportation was not associated with higher mortality rates at the intensive care unit (ICU) setting.[4]

ECMO transportation is not a common thing, and the volume of cases varies depending on the population that is being assisted. Most of the studies published so far are based on the description of the experience of different centers with a variable number of nearly 20 annual cases per ECMO center in periods not ffected by respiratory virus-related pandemics. Worldwide, the Karolinska Karolinska University Hospital has been reporting on the largest number of transportations with a series of over 900 cases (equivalent to 80 cases per year.[1]) This low incidence rate is associated with a risk of diminishing the specialization of healthcare teams, their equipment, and personnel available.

ECMO transportation demands a proper analysis to establish the needs of both the adult and pediatric populations. Also, it requires a high level of planning and communication among the different centers involved to reduce activation times and guarantee the correct sedation of the patients. Transportation vehicles should be adapted to meet this goal due to the larger number of health professionals and equipment that should be transferred. Also, a good selection of the means of transportation should be made to reduce transfer times with the highest possible safety. Finally, both the training and experienced gained by the ECMO team are essential to minimize the risks both for the patient and the healthcare professional. These principles had already been agreed on by the Spanish Society of Intensive and Critical Care Medicine and Coronary Units (SEMICYUC) and Spanish Society of Emergency Medicine (SEMES) due to the COVID-19 pandemic.[5] The great impact caused by the COVID-19 pandemic has increased the incidence rate of these cases.

In Spain, publications on ECMO transportation are scarce and the number of patients included in these publications is <20. The largest series ever recorded is that of Hospital Universitario Vall d'Hebron, Barcelona, Catalonia, Spain. This hospital reported on its experience within the first 3 months of the pandemic regarding the transfer of 19 COVID-19 patients on ECMO support.[6] Many more centers have also started or consolidated their ECMO transportation programs. For all this, we believe it is necessary to provide a series of recommendations that should be taken as a guide, although it is still an area without much scientific evidence available.

Definitions and phases of ECMO transportation

Transportation of ECMO patients has distinctive characteristics that are different from other transportations among hospitals, which is why the correct interpretation of this document is necessary to define interrelated terms we'll be seeing along the document.

- **Primary ECMO transportation:** type of transportation where the patient who requires ECMO remains in a hospital without capabilities to start such therapy. Therefore, there is this need for a mobile expert team on cannulation and ECMO start followed by the transfer of the patient to the center where he will receive support therapy.
- **Secondary ECMO transportation:** type of transportation between two hospitals of a patient who is already on ECMO support therapy.
- **Referral hospital:** center where the patient remains hospitalized prior to transportation
- **Destination hospital:** center to which the patient is being transferred while on ECMO support.
- **Ground transportation:** transportation through ground-based means of transportation (mainly ambulances or other similar vehicles).
- **Aerial transportation:** transportation through aerial-based means of transportation. It can be categorized as pitched-fixed propeller aircraft (airplanes) transportation or rotational blade aircraft (helicopters) transportation. Most aerial transportations include ground transportation between hospitals and airports/heliports too.

Within the different types of ECMO transportation available, primary transportation is the most complex of all; it is always a risky process that is sometimes very prolonged in time. It starts with a contact, usually a phone call, between the 2 hospital centers involved followed by a first examination. Afterwards, the patient is welcome at the destination hospital. Therefore, we can define a series of stages that are common to primary transportation:

- **Stage 1. Activation of the ECMO team:** the referral hospital calls the destination hospital. Patient's status is then assessed over the phone. An early decision is made of indication, contraindication or no indication (patient without contraindications but who does not meet the criteria to be started on ECMO at present time). At this stage, indications to optimize patient's treatment and keep follow-ups over the phone until the indication are often given.
- **Stage 2. Preparation and transportation of the ECMO team:** once ECMO support is indicated over the phone, the equipment coming from the referral hospital should be reviewed. Also, an initial plan on the type of ECMO support and cannulation needed should be defined. Also, the ECMO team and the equipment should both be transferred to the destination hospital.
- **Stage 3. In situ reassessment, optimization, and indication and initiation of ECMO:** at the referral hospital, and upon the arrival of the ECMO team, the patient is examined in situ, medical support is optimized if indicated, and a final decision is made on cannulation and the start of the therapy. If indication is confirmed, a cannulation strategy should be defined, problems should be anticipated with alternative plans in case of complications, the circuit should be purged, and the different roles distributed between the teams of both hospitals. Also, cannulation and ECMO support should be started.
- **Stage 4. Stabilization and preparedness of transportation:** once ECMO support has been started, the patient needs to be stabilized, and the necessary additional tests need to be performed before proceeding with transportation. After that, the patient is prepared for ECMO support and transportation.
- **Stage 5. Transportation of patient on ECMO support from the referral to the destination hospital**: it requires treating the patient during transportation and managing complications, diagnosis, and solution.
- **Stage 6. Arrival of the patient to the destination hospital**: upon arrival to the destination hospital, the patient is admitted to the ICU, and information is transferred from the transportation team to the referral team.
- **Stage 7. Transportation assessment:** after completing transportation, the team should meet to discuss and reassess the case, talk about the problems that may have happened, and give options for improvement so the team can review, modify, improve, and validate their ECMO transportation protocol.

Material and method

Due to the growing demand and the existence of different experiences in the field of critical care transportation and specifically the transportation of patients treated with ECMO, SEMICYUC, and the Spanish Society of Pediatric Intensive Care (SECIP) commissioned their working groups to elaborate a few recommendations on this field. SEMICYUC participated through its Critical Care Transportation Working Group. SECIP did so through its ECMO Virtual Group. Therefore, a group of writers including adult and pediatric intensivists of different regions and representative of the scientific community was created. To participate in this team a declaration of the possible conflicts of interest was required. In its first meeting, the team determined a methodology to review the references, provide local experience, and plan the main aspects on which recommendations should be based.

A structured bibliographic search was conducted on MEDLINE/PubMed using *extracorporeal membrane oxygenation* and *transportation of patients* as keywords, as well as *mobile extracorporeal membrane oxygenation*, and com-

Table 1 Grading of reecommendations.

Strength of recommendation	Definition
A	Strong recommendation of use
B	Moderate recommendation of use.
C	Mild recommendation of use.
D	Supports the recommendation of use.
Quality of evidence	**Definition**
I	Comes from, at least, a well-designed randomized clinical trial
II	Comes from, at least, a well-designed non-randomized clinical trial (case control or cohorts) of multiple time series or very evident results from uncontrolled clinical trials
III	Comes from expert opinions from renown professionals based on clinical experience or descriptive studies

binations of sub-headings. Articles published in English or Spanish between 2001 and 2020 were included. Articles with descriptions of individual cases were not included. Out of the 66 articles selected in the first place, a secondary bibliography was added, as well as routine guidelines and recommendations until a 135 citation-bibliography would be reached.

Seven different groups on issues on which recommendations should be given were agreed on: patient selection; reference centers; means of transportation; selection and risks; characteristics of the means of transportation and equipment used, health personnel; necessary experience and models, preparation, training, and clinical safety.

Once the bibliographic body and the questions that would be analyzed were selected, inter-group recommendations were made followed by a consensus document that was submitted to the writing team. Given the lack of comparative studies in this field, the GRADE methodology was not followed.[7] The text with the recommendations was submitted to the writing team—and using the modified Delphi methodology[8]—each recommendation was analyzed and replanned with a high enough level of agreement. If consensus was not reach at some point an additional writing effort was made until it would be accepted by the entire group.

Each recommendation was graded according to the strength of recommendation and the quality of tests used (Table 1). When the work from the writing team was done, the manuscript first draft was submitted to SEMICYUC and SECIP members through their scientific committes so they could make additional comments or suggestions for 15 days. After this time, the manuscript final draft was submitted for publication (Tables 2–5).

Results

The justification of each recommendation is available in the supplementary data.

Table 2 Equipment recommended for primary transfers.

Cannulation material	ECMO equipment	Electric material	Other type of material
Venous and arterial cannulae with guidewires (specific for each patient and covering all possible cannulation strategies)	Centrifuge pump, membrane (x2), console (battery), heater	Electrical adapters for ambulance, and battery (x2)	Intubation kit, and difficult airway
Sets of sterile surgical cannulae	Circuit x2 (check pre-prime in case of emergency) Three-way stopcock	Proper ventilation according to the age of each patient Suction sources and catheters	Percutaneous thoracic drainage set Defibrillator
Proper light sources in both number and intensity	Circuit connectors (straight, Y-shaped)	Ultrasound for cannulation	Central and arterial venous accesses
Suction for surgical use	Sterile priming solution	Portable gas meter and ACT	Prepared volume, 50 mL syringes
Sterile gloves, scrubs, masks, and gowns	Pincers for clamping x8	Infusion pumps	Thoracic compression device for CPR (optional)
Fridge to transport hemoderivatives	Emergency pump	Multiparametric transportation monitor with wires and connections	Oxygen tanks or cylinders +/− compressed air (as required)
Heparine and antibiotics for the moment of cannulation	Gas mixer Additional tubing Equipment for cannula fixation	Alternative energy source in case of electrical failure	Medical gas connections and long enough tubes

Table 3 Primary and secondary ECMO transportation. Most common complications during the transfer.

Complications during ECMO transfer in order of frequency	
Patient-related	Accidental extubation
	Low level of sedation
	Bleeding
	Cardiac dysfunction (if respiratory support only)
	Hypovolemia
	Recirculation
	Arterial ischemia
Equipment-related	Defective material
	Excessive oxygen consumption
	Thrombosis/thrombi in the circuit
	Electrical failure
	Battery of the pumps terminated
	Hypothermia
Personnel-related	Communication mistakes
	Forgeting equipment
	Shortage of personnel
	Logistics errrors
Means of transportation-related	Inadequate ambulance
	Traffic
	Malfunctioning power sources
Enviroment-related	Venous access freezing

Table 4 Cannulator team and profiles of each member.

Team member	Profile
Team leader	ECMO-expert intensivist
Cannulator physician	Cardiac surgeon or cannulation-expert intensivist
ECMO spcialist	ECMO-expert perfusion nurse or critical care nurse
Critical care nurse	Nurse expert in the management o critical care patients (including transportation)

Section I. Indications in ECMO transportation

Recommendation no. 1. When a patient with an indication for ECMO is in a hospital without ECMO capabilities, we recommend that this therapy should be started at the hospital of origin by the reference hospital medical staff. Afterwards, the patient should be transferred on ECMO to the reference center to proceed with his treatment. **Class A-II.**

Recommendation no. 2. Patients on ECMO elgible for a target therapy (eg, lung or heart transplantation or ventricular assist devices) hospitalized at a center without these therapies available should be transferred on ECMO to the definitive target therapy center always in compliance with the destination center. **Class A-III.**

Recommendation no. 3. Patients waiting on a lung or heart transplantation with severe exacerbation of their underlying clinical condition with clinical instability, difficulties for conventional transportation, and hospitalized at a non-transplantation center should be assessed by both centers to decide on the indication of whether to go ECMO or not as a bride therapy and on ECMO transportation. **Class A-III.**

Section II. System of ECMO reference centers

Recommendation no. 4. The transfer of patients on ECMO support requires a complex logistics organizational structure. Therefore, it is highly advised to actively work on the organizational and logistics aspect of the whole transfer. Inter-center and inter-region collaboration is advised here. **Class A-III.**

Recommendation no. 5. To treat an entire population, it is necessary to have ECMO reference centers available. Therefore, it is necessary to create a transportation network at both regional and national level with experienced and trained transportation teams to guarantee ECMO transportations to large volume units (ECMO-capable centers). **Class A-III.**

Section III. ECMO means of transportation

Recommendation no. 6. It is advisable that regional or national ECMO programs should individualize and adapt their means of transportation and logistics to their own reality. **Class A-III.**

Recommendation no. 7. The means of transportation that is recommended to cover distances under 250 miles is ground transportation. **Class B-III.**

Recommendation no. 8. Pitched-fixed propeller aircraft are recommended to cover distances over 370 miles. In the case of inter-island transportation, the decision should be individualized based on the distances that should be covered and the type of patients that should be transferred. **Class B-III.**

Recommendation no. 9. The use of the helicopter as means of transportation is advised if the visibility, safety, and efficiency of transfer time is guaranteed. **Class B-III.**

Recommendation no. 10. We recommend that the decision and selection of the means of transportation that will eventually be used should be based on principles to guide a good decision-making process. These principles should be based on the availability of the proper means of transportation, distance to be covered, and safety of transfer itself. These variables are interelated. **Class B-III.**

Recommendation no. 11. In primary transportation, the use of different means of transportation to do the round trip is advised if this shortens the time needed to start support in patients with imminent life-threatening conditions. **Class A-III.**

Section IV. Characteristics of transportation vehicles, equipment, and material for the transfer of patients on ECMO support

Recommendation no. 12. It is advisable that the means of transportation destined to the transfer of patients on

Table 5 Particularities of each cannulation team. Roles of each member during planning, cannulation, and transportation.

Team member	Planning	Cannulation	Transfer	Tansportation	At the cubicle
Team leader (intensivist) Coordinator	Before leaving: -Contact the referral hospital. -Coordinate equipment and checklist. At the referral hospital: -Reassessment of the patient and indication for ECMO. -Information to relatives and obtain informed consent.	-Coordination with the referral hospital team -Determine roles. -Make sure the patient remains stable during cannulation and while on ECMO -Collaboration with the cannulation procedure.	Coordination of the entire procedure.	The patient's treating physician.	Yes
Cannulation-expert physician (cardiovascular surgeon, intensivist)	Prepare cannulae and cannulation equipment	-Cannulation. -Surgical response to immediate potential complications	Stabilize the position of the cannulae.	Support in case of complication.	No
ECMO-expert nurse	Prepare outgoing equipment and checklist.	Purge and ECMO connection	Guarantee proper functioning of the technique	-Proper functioning of the pump -Gas meters, coagulation control, if appropriate.	Yes
Critical care nurse	- Prepare outgoing equipment and checklist.	-Cannulation support -Patient support	Monitorization, venous accesses, and perfusion	Monitorization and drug administration	Yes
Emergency medical technician	-Check the unit. -Make sure full energy and oxygen supplies have been loaded		Patient mobilization, equipment attachment, safety, stretcher	-Responsible for safety during the transfer	No

ECMO support should have a large cubicle that can fit a stretcher for transportation purposes to allow full access to the patient and different devices. Also, room to fit 3 seats for 3 healthcare professionals are needed. **Class A-III.**

Recommendation no. 13. The vehicles destined to the transfer of patients on ECMO support should be equipped with mechanisms for patient load/unload that do not require that the transportation team should lift heavy weights. The stretcher should be capable of supporting the additional weight of the entire ECMO equipment. The necessary means to safely attach the stretcher and the additional medical equipment should become available. **Class A-III.**

Recommendation no. 14. The vehicle electrical system should be capable of supplying electricity to the entire medical equipment for the entire transfer time. Such capacity refers not only to supply capabilities, but also to the voltage supplied and the number of outlets available. **Class A-III.**

Recommendation no. 15. The supply of medical gases inside the vehicle, particularly oxygen supply, should be sufficient to cover the needs of the ventilator and oxygenator during the transfer. Also, it should include a contingency plan if the transfer lasts a little longer for whatever reasons. Based on the type of transportation and patient the need for other gases like medical air or nitric oxide should be assessed too. **Class A-III.**

Recommendation no. 16. The transportation vehicle should include the necessary minimal electromedical equipment of an advanced life support unit for the management of critically ill patients including high performance ventilation, enough IV perfusion pumps, and a monitor-defibrillator with the capacity to monitor invasive arterial pressure during the transfer. **Class A-III.**

Recommendation no. 17. In cases of pediatric transfers on ECMO the need for specific equipment by adjusting requirements of size, electrical consumption, and autonomy to its peculiarities should be taken into consideration. **Class A-III.**

Recommendation no. 18. The ECMO team should carry the equipment needed to perform the entire cannulation procedure and start ECMO in an autonomous way, and solve all the possible complications that can occur. This equipment should be included in a checklist. **Class A-III.**

Recommendation no. 19. The need for blood products during transportation should be taken into consideration. In this case, the availability of a system to transport refrigerated products to preserve hemoderivatives is advised. **Class B-III.**

Recommendation no. 20. Strict management of hemoderivatives is advised to guarantee their traceability. **Class A-III.**

Recommendation no. 21. The availability of a system to perform blood gas analyses and portable coagulation monitoring analyzers in the transportation vehicle is advised. **Class B-III.**

Recommendation no. 22. The healthcare personnel involved in the transportation of paients on ECMO should be properly identified and have the necessary equipment and personal protection equipment to perform these transfers safely. **Class A-III.**

Section V. Composition of the ECMO transportation team

Recommendation no. 23. ECMO transportation teams should include healthcare personnel from the reference ECMO center who will be responsible for assessing, indicating, cannulating, transferring, and treating the patients. **Class A-II.**

Recommendation no. 24. The minimal team for the primary transportation of adult patients should include an ECMO-and-transportation expert lead intensivist, a cannulation-expert physician, an ECMO-expert nurse, and a critical care expert nurse (who should also be an expert in transfers). The professional profiles of each one of these roles should adapt to the functioning of each center. **Class A-II.**

Recommendation no. 25. The minimal team for a secondary transfer should include an ECMO-and-transportation expert lead intensivist, an ECMO-expert nurse, and a critical care expert nurse. **Class B-III.**

Recommendation no. 26. In case of ECMO transfers (primary and secondary) of pediatric patients, the entire ECMO team should include an expert pediatrician. **Class A-II.**

Section VI. Education and training of transportation teams

Recommendation no. 27. To start ECMO support, its management, and the transfer of the patient to the reference center, a highly qualified and specifically trained multidisciplinary team is required. **Class A-II.**

Recommendation no. 28. The start of ECMO transportation can only be initiated if the team is experienced enough in the management of these patients at the reference hospital, trained on the different transportation stages, and capable of coming up with solutions to the possible complications that may arise. **Class A-III.**

Recommendation no. 29. The transfer of patients on ECMO requires specific training including the necessary technical and non-technical skills to perform this procedure safely. This training should be based on simulations. **Class A-III.**

Recommendation no. 30. The ECMO transportation team requires theoretical-practical continuing medical education, and reassessment of cases and protocols to improve healthcare results according to the most compelling scientific evidence available. **Class A-III.**

Recommendation no. 31. The healthcare personnel in charge of aerial transportation needs specific training well beyond the training needed to perform regular ECMO transportation. **Class A-III.**

Section VII. Clinical safety involved in ECMO transportation

Recommendation no. 32. The use of checklists, standard procedures, and other cognitive aids is essential to improve safety during ECMO transportation. **Class A-III.**

Supplementary data includes the checklists proposed.

Recommendation no. 33. Centers performing ECMO transfers should design specific action protocols and procedures for the transfer of ECMO patients. These protocols should include the organizational and logistics aspects of every center like standard procedures for the clinical management of complications associated with ECMO patients. **Class A-III.**

Recommendation no. 34. The ECMO team responsible for the transfer should first contact the referral hospital team to obtain updated information on the patient and give clear recommendations on preparation and reception to the destination team. Among other things, the availability of an ultrasound machine, a reservoir of crossed hemoderivatives, and the assessment of different vascular accesses should be observed. **Class A-III.**

Recommendation no. 35. ECMO transportations should start with a team briefing to discuss the characteristics of the patient, prepare the equipment needed in each case, establish the early cannulation strategy that should be followed, and anticipate the possible problems that can occur. **Class A-III.**

Recommendation no. 36. In cases of aerial transportations, the entire flight personnel should attend pre-flight briefing for security reasons. **Class A-III.**

Recommendation no. 37. In primary transportations, and prior to starting cannulation, both the referral and the destination ECMO teams should start a briefing to organize the transfer, establish the different roles of both teams, select the best cannulation strategy that should be used, anticipate complications, and promote good teamwork practices between the healthcare personnel of both centers. **Class A-III.**

Recommendation no. 38. Before cannulating the patient, an early cannulation strategy should be implemented followed by alternative plans in case complications or procedural difficulties arise. Therefore, the best cannulation strategy will depend on the situation of the patient, the experience of the treating team, and the equipment available. **Class A-III.**

Recommendation no. 39. Before starting the transportation stage, the greatest possible stability regarding transportation should be secured, as well as the proper functioning of the ECMO system, and the planning of the different common strategies that should be followed. Also, complications should be anticipated. **Class A-III.**

Recommendation no. 40. Before starting transportation, the patient should already be secured in his stretcher. Also, all mobile elements should already be attached to rigid structures through approved support systems. Also, the entire team should remain seated and with their safety belts fastened. **Class A-III.**

Recommendation no. 41. After completing the transfer, defriefing should be conducted including clinical and technical aspects to assess the problems that may have popped up, promote self-education, and establish plans to improve the transportation system for future transfers. **Class A-III.**

Discussion

Recommendations for the transfer of critically ill patients on ECMO designed by SEMICYUC and SECIP critical care transportation working groups attempt to reduce variability in the management of critical care patients—adults and children alike—and contribute to the standardization of care, which has the potential of bringing clinical benefits to these patients.

Since no clinical trials or other experimental studies have been conducted on the transfer of patients on ECMO, one of the main limitations of this manuscript is that some recommendations have a low level of evidence. Therefore, it is adviseable to analyze the degree of compliance to these recommendations and the evolution of the routine clinical practice within the next few years.

Conclusion

These recommendations try to be a useful tool for the decision-making process in the context of the creation of reference centers, transportation equipment, and resource selection. Their implementation will depend on the availability of resources in every region.

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Conflicts of interest

None reported.

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