



# How Do Hepatologists Gain Access to Liver Transplant Units?

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## ABSTRACT

Liver transplantation has evolved from an experimental treatment to be considered as the most effective therapy for end-stage liver disease and selected cases of hepatocellular carcinoma. Transplant hepatologists must have specific knowledge and abilities to treat those patients who receive a liver transplant. In Spain, approximately 1100 liver transplants are performed each year, and most centers assume both postoperative care and long-term follow-up, which has led to a significant work load in liver transplant units. Despite previous attempts to establish an official training program in hepatology, the Spanish health system does not presently have a specific liver transplant training program to guarantee that future needs of physicians are covered. Collaboration between health authorities and scientific societies is required to guarantee adequate assistance to liver transplant recipients in the future.

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**H**EPATOLOGY has undergone a dramatic development over the last decades. In its beginnings, it was considered a discipline oriented toward basic research, but progressively it has evolved toward a clinically oriented specialty. In recent years, there have been extraordinary advances in the knowledge and treatment of liver diseases, especially in entities such as hepatitis C, which has evolved from an infection with potentially devastating consequences to a curable disease in most patients. On the other hand, there has been a considerable increase in the prevalence of nonalcoholic fatty liver disease, which may lead to an increase in the number of patients with end-stage liver disease and transplant requirements [1].

In the same way, liver transplantation has undergone an extraordinary evolution in recent years. This procedure, which was initially considered an experimental treatment, is now the most effective therapy for end-stage liver disease, acute liver failure, and selected cases of hepatocellular carcinoma. It is difficult to estimate the impact that new therapies for hepatitis C and the increasing prevalence of steatohepatitis will have on the number of patients in need of liver transplants in the coming years [2]. On the other hand, the improvement in pre- and postoperative care of liver transplant recipients has reduced the number of entities that are considered relative contraindications to the procedure, so it can be offered to older patients with different comorbidities without affecting long-term outcomes. As a result, it is difficult to make a prediction of the future needs of liver transplants and consequently of the number of professionals that will be needed for the care of these patients.

However, the number of liver transplants performed in Spain has remained stable between 1000 and 1100 each year [3]. Most centers in our country still perform long-term follow-up of liver transplant recipients. As a consequence, the number of patients treated and monitored in each unit has progressively increased. Transplant hepatologists have emerged as the physicians with specific knowledge and abilities to take care of these patients while on the waiting list and after receiving transplants, and it is expected that more specialists will be needed in the future due to the increasing number of patients treated in each center.

The care burden depends not only on the number of patients monitored but also on the workforce of hepatologists in each unit. A survey between liver transplant centers has been carried out to ascertain how many hepatologists work in each one. The first transplant units in Spain were constituted 30 years ago, and there has been a progressive increase in the number of centers that perform liver transplants and in the number of transplants performed per hospital each year. At the same time, the number of transplant hepatologists has also risen. Currently, the average number of transplant hepatologists is widely variable (Table 1). These figures reflect differences in the workload and also differences in the organization of work, as in many cases, especially in small

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**Table 1. Hepatologists and Transplant Hepatologists in Spanish Liver Transplant Centers**

Hospital	Number of Transplant/Year	Number of Transplants Included in Registry	Number of Hepatologists	Number of Transplant Hepatologists
I. Cristina	30	204	4	3
C.U. Navarra	20	513	5	3
Valladolid	49	545	5	4
Zaragoza	35	578	3	3
La Paz	20	675	7	7
P.Hierro	28	841	6	3
A Coruña	60	1056	4	3
G. Marañón	40	1096	9	3
V. Arrixaca	70	1201	5	3
V. Rocío	65	1230	7	5
Vall d'Hebron	40	1463	9	1
Bellvitge	55	1536	5	1
Clinic	70	2057	20	3

centers, physicians are assigned to liver transplants, but they also develop other tasks with no relation with transplants or even with hepatology.

Most units are about 25–30 years old and, according to the results of the survey, a significant percentage of physicians will reach their retirement age in coming years: up to 50% of the staff in some centers during the next 5 years and up to 70% during the next 10 years.

Either due to the increasing workload or due to possible retirements in future years, it is necessary to train transplant hepatologists to ensure adequate assistance to liver transplant recipients and facilitate their access to units after being trained.

In 1999, the Lewin group performed a study on the workforce of hepatologists whose results were decisive to demonstrate that transplant hepatology is a discipline that requires specific knowledge and abilities that are hardly acquired during gastroenterology training [4,5]. Training in hepatology and liver transplants has suffered a deep transformation from the beginning, when acquisition of skills was made mainly by short stays in pioneer centers or by attendance at conferences or meetings on the topic. A physician with a specific dedication to liver transplants needs to deal with patients with end-stage liver disease and liver transplant recipients, both in the immediate postoperative period and in the long term. Treatment of these patients requires considerable expertise, including knowledge of hepatobiliary anatomy and pathophysiology, immunology, management of end-stage liver disease and liver tumors, infectious diseases, organ allocation and patient prioritization, and prevention and management of complications of liver transplants [6,7].

If we take a look at the teaching programs of the most commonly involved specialties (digestive and internal medicine), it seems obvious that they only treat general aspects such as indications and contraindications of liver transplants [8]. Therefore, this period seems clearly insufficient for residents who complete their training to be able to cope with solvency and autonomy in the field of transplantation. In fact, residents themselves, when asked about their impressions, recognize that the training is deficient. In

2012, a survey of residents of different specialties about their training in the field of solid organ transplantation was published. The first thing that draws attention is that up to 20% of them answered that they had no contact with transplant patients despite carrying out their training in a center where transplants were performed, and only 41% of them had clear teaching objectives in this field [9].

Currently, there is no specific training system in liver transplantation in Spain, so abilities are acquired by stays in centers with expertise, attendance of meetings and conferences, and integration in already-constituted units. At present, the hiring of new specialists is done according to the following systems:

1. Interview with the head of service
2. Compulsory hiring lists of gastroenterologists in which a specific evaluation of curriculum is not performed
3. Evaluation by a committee (curriculum, experience, etc.)

Whatever the personnel selection system used, they have some limitations that are in some part related to the fact that liver transplants in Spain are primarily performed in public centers:

1. High rate of temporality limits the investment of resources of the unit in training of new personnel.
2. Hiring lists, by not taking into account the specific experience in the subject, do not guarantee the selection of the personnel whose skills are the most appropriate for the unit. This problem is especially acute when it comes to short-term substitutions, such as those due to illness or maternal leave.
3. Shortage of specialists: this problem is especially acute in gastroenterology, where traditionally more specialists are orienting their careers toward endoscopy or gastroenterology in general. This trend has intensified in recent years as a result of the implantation in most communities of colorectal cancer screening programs.

Taking into account that there are areas of medicine that require highly specialized abilities, government authorities approved many years ago the creation of specific training areas. Hepatology was considered one of

those disciplines that deserve to be recognized as specialties by themselves, and scientific associations such as the Spanish Association for Study of Liver Diseases made a proposal for the accreditation of professionals. Abilities in hepatology would be acquired through a 2-year training period in accredited centers and would include specific transplant training [10]. Nevertheless, the law that regulated this training system was annulled due to a formal question; therefore, the theoretical solution to the problem of training new staff has vanished.

It seems clear that if adequate measures are not developed to solve all these problems, in coming years we could face a serious lack of properly trained transplant hepatologists. Therefore, health authorities and scientific societies must make a joint effort to ensure that patient care maintains the high quality standards achieved over the last decades.

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