Hashing It Out Over Cannabis
Moving Toward a Standard Guideline on Substance Use for Cardiac Transplantation Eligibility That Includes Marijuana

Larry A. Allen, MD, MHS; Amrut V. Ambardekar, MD

When I was in England, I experimented with marijuana a time or two, and didn’t like it. I didn’t inhale, and I didn’t try it again.

—President Bill Clinton

During the 1992 presidential campaign, then Governor Bill Clinton’s infamous words sparked substantial controversy regarding the appropriateness of prior marijuana use in a presidential candidate. Approximately 15 years later, then Senator Barack Obama’s openness regarding his prior marijuana use—and statements that he did inhale—drew little negative attention, reflecting a societal shift in which the stigma previously ascribed to marijuana has been blunted. Likewise, the field of medicine has evolved in its regard of the medical properties of marijuana in the treatment of some diseases. In parallel, this decade has witnessed rapid decriminalization of marijuana use: 25 states and the District of Columbia and 46 countries to assess current practice patterns and attitudes regarding marijuana use and heart transplant listing.7 Not surprisingly, the results showed a highly heterogeneous approach.8

Approximately two thirds of respondents supported listing patients who use legal medical marijuana for transplant; a third did not. Just under a third of respondents supported transplant listing based on medical marijuana use.6

Within this context, Neyer et al, in this issue of *Circulation: Heart Failure*, conducted a web-based, 15-item, multiple-choice survey of 360 heart transplant providers from 26 countries to assess current practice patterns and attitudes regarding marijuana use and heart transplant listing.7 Not surprisingly, the results showed a highly heterogeneous approach. Approximately two thirds of respondents supported listing patients who use legal medical marijuana for transplant; a third did not. Just under a third of respondents supported transplant listing for patients using legal recreational marijuana; two thirds did not. More than two thirds required a period of demonstrated abstinence from marijuana before listing; a third did not. There were no differences between the proportion of respondents supporting transplant listing after stratification by profession or region, suggesting that this heterogeneity reflects individual opinion rather than regional legal or cultural norms. Further highlighting the level of confusion surrounding this issue, among survey respondents from states with laws prohibiting patients from being denied transplant listing based on marijuana use, more than three quarters were in potential conflict with those laws in reporting denial of all marijuana-using patients or mandating a period of abstinence.

The International Society of Heart and Lung Transplantation recommends in the 2016 Listing Criteria update that “patients who remain active substance abusers (including alcohol) should not receive heart transplantation (Class III, Level of Evidence: C).”9 It also states that “it is reasonable to consider active tobacco smoking as a relative contraindication to transplantation. Active tobacco smoking during the previous 6 months is a risk factor for poor outcomes after transplantation (Class IIa, Level of Evidence: C).”

The opinions expressed in this article are not necessarily those of the editors or of the American Heart Association.

From the Section of Advanced Heart Failure and Transplantation, Division of Cardiology, Department of Medicine, University of Colorado School of Medicine, Aurora.

Correspondence to Larry A. Allen, MD, MHS, Medical Director for Advanced Heart Failure, University of Colorado School of Medicine, Academic Office 1, Room 7109, 12611 E 17th Ave, Mail Stop B130, Aurora, CO 80045. E-mail larry.allen@ucdenver.edu

(Circ Heart Fail. 2016;9:e003330. DOI: 10.1161/CIRCHEARTFAILURE.116.003330.) © 2016 American Heart Association, Inc.

_Circ Heart Fail_ is available at http://circheartfailure.ahajournals.org DOI: 10.1161/CIRCHEARTFAILURE.116.003330
Although the response rate was only 22% and there are other limitations to a survey of this type, what comes through is clear: the variability in current marijuana policies for heart transplantation are equivalent to bad weed. Donor organs are a national resource and should thus be allocated justly and equitably. Allowing individual centers to develop their own specific criteria for adjudicating candidacy for marijuana users leads to substantial inconsistency and variability, as demonstrated by Neyer and colleagues. Some transplant centers may adopt more lenient criteria for a variety of reasons, ranging from a compassionate desire to give patients an opportunity for life-saving therapy to the more insidious pressure to grow transplant volume to keep up with today’s competitive healthcare environment. Differences in state laws may also contribute to variation. For example, here in Colorado, where marijuana laws are the most permissive in the country, we have had several patients who were denied for transplant listing elsewhere because of active marijuana use ask to be considered for transplant at our center. Moreover, allowing variability in policy from one transplant center to another has unintended negative consequences for the greater transplant community in that it potentially leads to shopping for transplant centers. Such shopping for transplant centers inevitably creates healthcare disparities in that patients with socioeconomic resources are able to move to a different center for transplant while those without resources cannot.

Heart transplant policies should consistently recognize the balance of patient rights and medicinal benefits against potential harms of marijuana. Transplant providers’ concerns about the overall safety of marijuana in the setting of heart transplantation are also highlighted in this study because the majority of survey respondents felt that marijuana was physically harmful. Although the Internet would suggest that marijuana is a panacea for all that ails, the preponderance of scientific evidence would back the majority of survey respondents who expressed concerns about marijuana.9 There are several potential adverse effects of marijuana use in relation to heart transplantation, including the risk of dependence, nonadherence, weight gain, infection, coronary disease, and unregulated product preparations and dosing.9 Particularly relevant to the transplant population is the risk of drug-drug interactions and alterations in the liver metabolism of immunosuppressive drugs with relatively narrow therapeutic windows.10 Clearly, additional research is needed on the long-term safety of chronic cannabis use in healthy and disease states. Meanwhile, it is particularly concerning that laws have been passed in some states prohibiting denial of transplant based solely on marijuana use alone when the full risks and benefits remain unclear.

Table. Proposed Universal Substance Use Guidelines for Patients Being Evaluated for Heart Transplantation

1. General: Unless medically indicated, all patients being evaluated for heart transplant must abstain from using tobacco products and illicit substances. Patients must demonstrate an ability to abstain from excess alcohol and must abstain completely if there is a history of prior alcohol abuse/dependence or testing to suggest alcohol abuse.
   - Tobacco products include cigarettes, cigars, E-cigarettes (vaping), and chewing tobacco.
   - Illicit substances include cocaine, heroin, amphetamines, hallucinogens, nonmedical marijuana,4 and any other nonprescribed controlled substance.

2. Verification: Toxicology should be performed at the initiation of a heart transplant evaluation and randomly thereafter for all patients, including the following:
   - Drug screen (urine).
   - Cotinine levels (blood or urine).
   - Phosphatidylethanol (PEth, blood).13

3. Exceptions for Approved Substance Use: Patients must notify the heart transplant team regarding medically prescribed controlled substances, including narcotics, benzodiazepines, and cannabis. Copies of prescriptions, medical letters, and provider contact information need to be provided to the heart transplant team. Patients may be required to cease use when alternative agents are felt to be more efficacious or the original reason for prescribing no longer exists.
   - Use of controlled substances should be reported by patients to transplant programs prospectively.
   - Chronic narcotic use must be prescribed by a pain management clinic or by a clinician experienced in the management of chronic pain disorders, with consideration for tapering off or using alternate options.11 Such long-term narcotic use should be reviewed and approved by the heart transplantation team.
   - Cannabis (marijuana) may only be used if prescribed legally by a medical provider—and only if it is ingested or used topically, not smoked—with consideration for tapering off or using alternate options. Use must be reviewed and approved by the heart transplantation team.

4. Actions for Known Abuse: For patients with positive screens or who endorse a history of substance abuse, a trained individual (ie, licensed social worker, psychologist, or psychiatrist) will assess and determine if the patient has an active substance-related disorder using established mental health criteria.14 If so, before listing, the patient must do the following:
   - Sign a standard contract outlining expectations.
   - Undergo a formal substance use assessment as directed by the trained individual.
   - Participate in a recommended treatment program. Ideally, this should result in demonstration of the following: insight into past substance misuse, understanding of how substance misuse has had an impact on current health, development of adequate coping skills for dealing with stressors, and presence of a social network which acknowledges the issue posed by substance misuse and supports the patient’s commitment to abstinence.
   - Demonstrate abstinence through toxicology screening at least monthly for a minimum of 6 consecutive months. Patients with positive screens during this time period will have to re-establish at least 6 consecutive months of negative screening tests. Patients who develop positive screens while listed for transplant should be made inactive or delisted until they re-establish at least 6 consecutive months of negative screening tests.
This is not to argue that marijuana is worse than tobacco or alcohol; rather, marijuana shares several attributes with tobacco and alcohol—and none may mix well with transplantation. Given the long-term legalization of tobacco and alcohol and the high prevalence of use, rules for transplantation are somewhat (although not completely) consistent around tobacco and alcohol use; given the relatively recent decriminalization of marijuana, perhaps it will just take time to see transplant policies coalesce around marijuana. As policies do develop, it may be helpful to consider marijuana similar to opiates during evaluation and listing for transplantation, where both have medical and recreational uses and both have potential benefits and hazards.11

Although we should not require patients to jump through arbitrary hoops before transplantation merely to demonstrate our authority, it is important to assess whether patients can demonstrate behaviors that support good outcomes. Thus, it is reasonable to ask patients not to use substances that can impair outcomes after transplantation or, at a minimum, compel modified use in a way that could also support good post-transplant care and subsequent outcomes. Furthermore, we should not penalize honest people while rewarding those who lie, testing some people for some substances of abuse while not testing others. Finally, we should not create mixed messages between different transplant centers regarding what is required to be listed for cardiac transplantation. Therefore, a universal standard is warranted: one that clearly defines substances of abuse, asks for consistent and meaningful expectations for abstinence, provides standards for testing for all patients (not just those who admit to use), and suggests thoughtful action plans for addressing use and abuse in patients who are simultaneously suffering other medical problems and are in desperate need of advanced heart failure therapies12 (Table). This kind of approach, although at risk of problems and are in desperate need of advanced heart failure therapies for heart transplantation: A 10-year update. J Heart Lung Transplant. 2016;35:1–23. doi: 10.1016/j.healun.2015.10.023.


Disclosures

Dr Allen discloses institutional research grant support from National Institutes of Health (K23 HL105896), Patient-Centered Outcomes Research Institute (PCORI-1310–06998), and the American Heart Association and consulting relationships with St Jude, Janssen, Novartis, and ZS Pharma. Dr Ambardekar is supported by a Scientist Development Grant from the American Heart Association and by the Boettcher Foundation’s Webb-Waring Biomedical Research Program.
Hashing It Out Over Cannabis: Moving Toward a Standard Guideline on Substance Use for Cardiac Transplantation Eligibility That Includes Marijuana

Larry A. Allen and Amrut V. Ambardkar

Circ Heart Fail. 2016;9:
doi: 10.1161/CIRCHEARTFAILURE.116.003330

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circheartfailure.ahajournals.org/content/9/7/e003330

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Circulation: Heart Failure can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Circulation: Heart Failure is online at:
http://circheartfailure.ahajournals.org//subscriptions/