Trends in Liver Transplantation in Hepatitis C Virus–Infected Persons, United States

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To the Editor: The Centers for Disease Control and Prevention and US Preventive Services Task Force recommend a one-time screening for hepatitis C virus (HCV) infection in adults born during 1945–1965 (birth cohort), a demographic group with a disproportionately high prevalence of HCV infection (1,2). However, some experts have warned against routine HCV screening of persons in the birth cohort, stating that this recommendation is based on unproven assumptions about the benefit of screening in reducing HCV-related mortality, given that only a minority of infected persons develop end-stage liver disease (ESLD) (3). To determine the relative effect of the birth cohort on HCV-related ESLD incidence in the United States, we analyzed trends in liver transplantation (LT) waitlist registrations and LT surgeries performed in 1995–2012. Using data from the United Network for Organ Sharing national registry, we evaluated birth cohort–specific (birth cohort vs. non–birth cohort) and etiology-specific (HCV vs. non-HCV) trends in LT waitlist registrations and LT surgeries performed in the United States during that 18-year period.

The proportion of HCV-infected persons born during 1945–1965 among all persons with LT waitlist registrations in the United States increased from 17.8% in 1995 to 35.2% in 2012 (Table). The highest proportion of LT
waitlist registrations for HCV-related ESLD was for persons in the birth cohort and increased incrementally from 61.2% in 1995 to 90.5% in 2012. The proportion of LT waitlist registrations for HCV-related ESLD among persons younger than the birth cohort was 1.0% in 1995 and 3.6% in 2012; among persons older than the birth cohort, the proportion was 37.8% in 1995 and 5.9% in 2012.

Similarly, among LT recipients, the proportion of HCV-infected persons born during 1945–1965 doubled from 17.4% in 1995 to 35.4% in 2012 (Table). The proportion of LT surgeries performed for HCV-related ESLD among persons in the birth cohort increased from 60.2% in 1995 to 90.7% in 2012. Among persons younger than the birth cohort, the proportion of LT surgeries performed for HCV-related ESLD was 0.7% in 1995 and 5.0% in 2012; among persons older than the birth cohort, the proportion was 39.1% in 1995 and 4.3% in 2012.

During 1995–2012, the ratio of new LT waitlist registrations to LT surgeries performed for HCV-infected persons in the birth cohort remained unchanged at 1.9:2.0 despite the aging of this birth cohort. Overall trends in HCV-related LT waitlist registrations and LT surgeries stabilized during 2001–2012; the proportion of HCV-infected persons in the birth cohort increased, and the proportion of HCV-infected persons not in the birth cohort decreased.

To exclude the possibility that HCV-related ESLD has always simply affected persons 50–70 years of age, we performed a subanalysis examining the proportion of LT waitlist registrations and LT surgeries for persons 50–70 years of age in each year from 1995 through 2012. During this 18-year period, among persons 50–70 years of age, new HCV-related LT waitlist registrations increased from 43.9% to 93.0%, and LT surgeries performed increased from 47.1% to 86.2%. This finding suggests that persons born during 1945–1965 are a distinct birth cohort that is increasingly affected by HCV-related ESLD.

Although persons born during 1945–1965 make up an estimated 27% of the US population, they account for ≈75% of all HCV infections and 73% of HCV-associated deaths in the United States. Our findings are consistent with those of an earlier modeling study by Davis et al., which suggested that the age of persons with HCV-related cirrhosis and its complications will continue to increase.

Limitations of our study include inherent limitations of retrospective design and registry data. The designation of HCV infection and birth cohort status is based entirely on data entered into the database, which are not necessarily subject to cross-checking confirmatory measures. However, any errors in data entry that may have occurred are probably non-differential. Despite these limitations, our analysis demonstrates that >90% of HCV-infected persons registered for LT or undergoing LT surgeries in 2012 were in the birth cohort.

Earlier diagnosis and preemptive cure of HCV infection with highly effective and safe direct-acting antiviral drugs may delay or reduce the need for LT among persons in the birth cohort. Testing and linkage to care for HCV-infected persons, particularly persons in the birth cohort, can be expected to reduce HCV-related illness and death. In response to the approval of higher efficacy antiviral drugs and rapidly rising liver failure–related death among this cohort, the use of HCV-infected donors has increased, resulting in truncated wait times for HCV-infected LT recipients in many regions, whereas HCV-uninfected persons are generally waiting considerably longer, often years, for HCV-uninfected donors. This phenomenon is another index of the extent of HCV-related ESLD in the United States.

References

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**Wohlfahrtiimonas chitiniclastica Infections in 2 Elderly Patients, Hawaii, USA**

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To the Editor: We describe 2 cases of *Wohlfahrtiimonas chitiniclastica* sepsis and skin and soft tissue infections in 2 elderly patients; 1 case was fatal. Both patients lived in poor hygienic conditions in Hawaii, USA.

The first case occurred in a 72-year-old man with history of stroke and deafness. After being unattended for 3 days, he was found unconscious on the floor of his home. He was hypotensive, bradycardic, and hypothermic. Maggots were crawling out of an umbilical wound and were present in a 2 × 3 cm laceration on his right dorsal foot. His leukocyte count was 2.4 × 10³ cells/μL with 42% band cells, creatinine level was 2.5 mg/dL, and lactic acid level was 1.8 mg/dL. Aerobic and anaerobic cultures of blood collected at hospital admission grew *Escherichia coli* and *W. chitiniclastica* within 12 hours. Initial treatment consisted of intravenous piperacillin/tazobactam (4.5 g every 6 h), intravenous clindamycin (900 mg every 8 h), and intravenous vancomycin (1,000 mg every 12 h). The patient died from septic shock on his second hospital day. *W. chitiniclastica* was identified by using 16S rRNA sequencing (MicroSeq 500 16S rDNA Bacterial Identification Kit; Applied Biosystems, Foster City, CA, USA) and analyzed by using RipSeq mixed DNA interpretation software (iSentio Ltd., Bergen, Norway). A 100% match with *W. chitiniclastica* type strain H100 (GenBank accession no. HQ407275) was observed. Antimicrobial drug–susceptibility testing was performed by using a microdilution method (MicroScan Dried Overnight Gram-Negative Panel; Siemens Medical Solutions, Malvern, PA, USA). The isolate was sensitive to all drugs tested, including classes of penicillin, cephalosporin, fluoroquinolone, carbapenem, tetracycline, and aminoglycoside.

The second case occurred in a 69-year-old homeless woman with a history of right hemiparesis from a ruptured cerebral aneurysm. She reported having had sacral pain and painful urination during the week before admission. Physical examination revealed stable vital signs, disheveled appearance, and multiple purulent decubitus ulcers in her sacral area. Her leukocyte count was high (20.9 × 10³ cells/μL). Urinalysis revealed pyuria, positive nitrates, and moderate leukocyte esterase, indicative of a urinary tract infection. Two blood cultures and urine culture were obtained at admission. She was given intravenous ceftaroline fosamil (600 mg every 12 h) to treat the urinary tract and decubitus ulcer infections. She then underwent surgical debridement of her decubitus ulcers, where tissue from a deep wound was obtained for aerobic and anaerobic culture. The deep wound culture grew polymicrobial flora that included *W. chitiniclastica, Staphylococcus aureus, Aeromonas spp., S. simulans,* and *Bacteroides fragilis.* The anaerobic bottle from both blood cultures grew a gram-negative anaerobic bacillus, *Anaerobiospirillum succiniciproducens.* In addition, *Proteus mirabilis* was isolated from a urine culture. These culture results prompted a change in the patient’s antimicrobial drug regimen to intravenous meropenem (1 g every 8 h), which the patient received for 12 days. She responded well and was discharged and prescribed oral amoxicillin/clavulanate (875 mg/125 mg every 12 h) for...