Epidemiology, clinical characteristics and outcome of early bacterial and fungal infections in liver transplantation: a single-centre, nine-year experience

Francesco Barchiesi, Roberto Montalti, Pamela Castelli, Daniele Nicolini, Silvia Staffolani, Fedrico Mocchegiani, Alessandro Fiorentini, Esther Manso, Marco Vivarelli

Clinica Malattie Infettive, Chirurgia Epatobilio e dei Trapianti, Università Politecnica delle Marche; Laboratorio di Microbiologia, Azienda Ospedaliero-Universitaria, Ospedali Riuniti Umberto I–Lancisi-Salesi, Ancona, Italy

ABSTRACT

Purpose The aim of our study was to define the epidemiology, clinical characteristics and outcome of early bacterial and fungal infections in a cohort of patients who underwent liver transplantation (LT) at the University Hospital of Ancona over a nine-year period.

Methodology All consecutive patients who underwent orthotopic LT at our centre were included in the study. Early infections (study group) and patients without early infections (control group) were compared.

Results A total of 330 LT recipients were included, 165 (49.7%) of these patients had at least one infection documented within 1 month after surgery. The incidence rate ranged from 25.8 (2.8%) in 2006 to 42.1 (6.3%) in 2012 (P=0.019). The incidence of early infections (aerosol, cUTIs, SSI) in LT recipients during the study period was 29.8% (101/330) and did not show significant changes over the years.

CONCLUSIONS

- The incidence of early infections did not change over the years.
- Early infections were more frequent in patients with ascites, Child-Pugh stage C or MELD score >25.
- In multivariate analysis, factors independently associated with early infection were CMV infection, LT due to child failure and recipients with MELD score >25.

BACKGROUND

Liver transplantation (LT) has been established as a life-saving procedure for the treatment of many end-stage liver diseases. However, infections, one of the most common complications, remain a leading cause of morbidity and mortality among LT recipients.

METHODS

This was a retrospective, observational study conducted at the Università Politecnica delle Marche, Ancona, Italy from August 2005 to October 2014. The patient population included consecutive patients who underwent orthotopic LT (n=330) and who survived more than 48 hours after transplantation.

DEFINITIONS AND MICROBIOLOGY

An infection was defined as occurring if the patient was identified through active surveillance in the first week after surgery, and then by review of patient records.

INFECTION CONTROL

Infections were classified as aerobic, anaerobic or fungal infections, based on the clinical presentation and the treatment strategy. The microbiology laboratory was the only laboratory providing laboratory services for all patients, and all samples were sent to this laboratory.

RESULTS

Early infections were defined as infections occurring in the first month post-transplantation. Infections were identified through active surveillance in the first week and then by review of patient records.

CONCLUSIONS

- The incidence of early infections did not change over the years.
- Early infections were more frequent in patients with ascites, Child-Pugh stage C or MELD score >25.
- In multivariate analysis, factors independently associated with early infection were CMV infection, LT due to child failure and recipients with MELD score >25.