BMC Geriatrics

Meeting abstract

Hepatocellular carcinoma in the elderly

Alessandro Uzzau*[1], Anna Rossetto[1], Floriana Carrer[1], Blerta Elezi[1], Daniele Pontello[1], Vittorio Barucchello[1], Erica Piccoli[1], Roberta Molaro[1], Enrico Benzoni[1], Giorgio Soardo[2] and Dino De Anna[1]

Address: [1]Department of General Surgery, Innovatory Program of Biotechnology, School of Medicine, University of Udine, Udine 33100, Italy and [2]Division of Internal Medicine, Department of Experimental and Clinical Pathology and Medicine, University of Udine, Udine 33100, Italy

* Corresponding author

This abstract is available from: http://www.biomedcentral.com/1471-2318/9/S1/A59

Aim of the study

Hepatocellular carcinoma (HCC) is the most common malignant liver disease, endemic in the third world because of its relation with HBV and HCV viral infection. Given the multiple etiologies of the disease, HCC trend of incidence is destined to grow in the future. HCC is often associated with cirrhosis, which is a limit to the surgery in relation to the functional state of the organ. It is more frequent after 60 years and is often diagnosed after age 70, in patients with multiple co-morbidity. This work will assess whether liver resection offers the same advantages in terms of survival in the elderly (over 70 years) than the younger population.

Materials and methods

We report our experience based on a series of 127 non-selected patients submitted to liver resection from September 1989 to January 2007. Patients were divided into two groups depending on age: Group 1 consists of 100 patients under 70 years old (mean age of 60.34 years), Group 2 consists of 27 patients over 70 years (mean age of 73.85 years). Frequencies and percentages have been adopted to summarize qualitative variables, while tools of descriptive statistics such as mean (± SD, standard deviation) and median was used for quantitative numerical variables. Survival was calculated using the Kaplan-Meier method, and differences were estimated by the Log-rank test. The Cox regression model was applied to determine independent variables that may influence survival. The multivariate analysis method was applied to analyze independent variables affecting survival and disease-free survival. Significant difference was defined as $p < 0.05$. The statistical analysis was conducted using the software for Windows SPSS 13.0 Evaluation Version (SPSS, Inc., Chicago, IL, USA).

Results

The two groups were compared by sex, etiology, underlying liver disease (HBV, HCV, alcohol, or multifactorial), presence or absence of cirrhosis (and Child-Pough functional status), grading, tumor size, number of lesions, absence of capsule, type of liver resection "minor" (= 2 segments) or "major" (≥3 segments), amount of blood transfusions, tumor markers, and complications. For none of these characteristics we found statistically significant differences except for higher values of alpha fetoprotein (AFP) in elderly patients ($p = 0.04$). In Group 1, 13 patients (13%) were submitted to right hepatectomy, 6 (6%), to left hepatectomy, 16 (16%) to bisegmentectomy, 30 (30%) to segmentectomy and 33 (33%) to wedge resection. In Group 2, 3 patients (11.5%) were referred to right hepatectomy, 4 (15.4%) to left hepatectomy, 2 (7.7%) to bisegmentectomy, 9 (34.6%) to segmentectomy and finally 41 (33%) to wedge resections. Post-operative mortality (within 30 days from surgery) was 5.5% (7 cases), 5 patients died in the first group (5.1%) and 2 in the second (7.4%) (ns). The rate of complications was 49.4% in 1st group and 40% in 2nd group (ns). The actu-
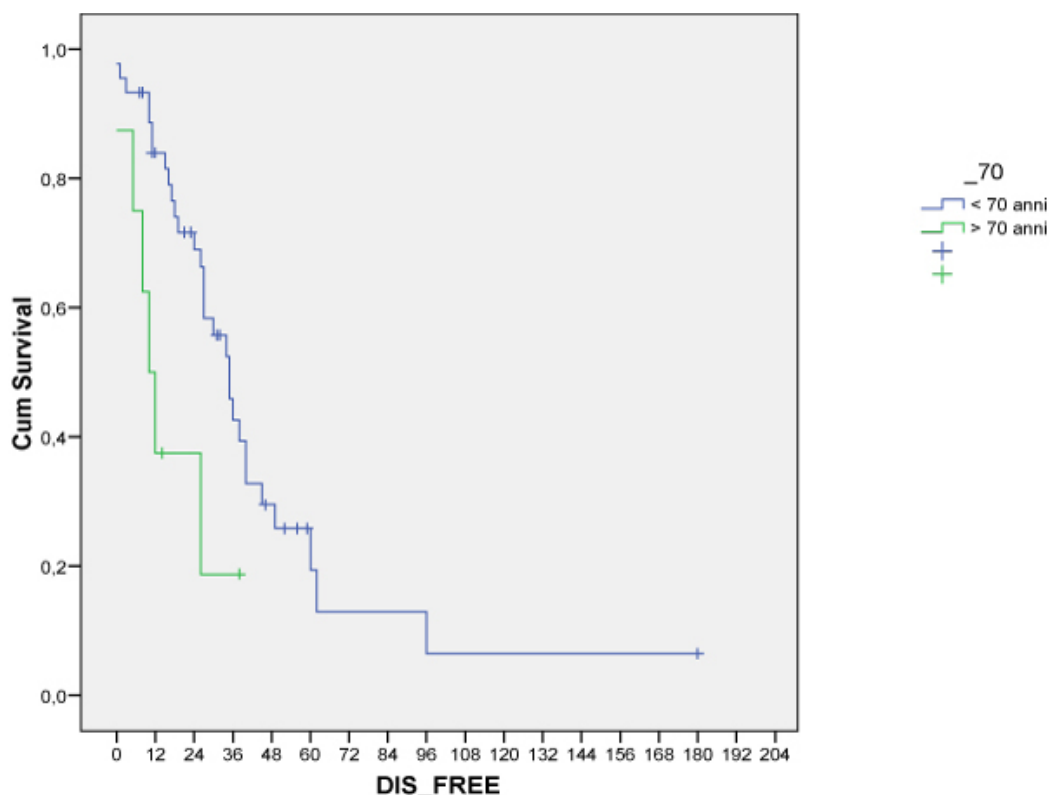
Figure 1
Disease-free survival by age groups.

arial survival rate at 1, 3 and 5 years was respectively 73.6%, 42.0%, 25.0% in 1st group and 72.2%, 32.5% and 5% in 2nd group (ns). The disease-free survival at 1, 3 and 5 years was 84.0%, 42.6% and 19% in 1st group and 37.5%, 18.8% and 0 in Group 2 (p = 0016, Figure 1).

Among the pathologic variables considered, diameter >5 cm had a negative impact only in the group of young patients (median survival of 48.4 vs. 36.4 months, p = 0.08). In the 1st group an AFP value >100 was predictive of poor outcome (median survival of 46.9 vs. 26.8 months, p = 0006). The presence of 2 or more HCC had a negative but not significantly impact on survival in the group of elderly (median survival of 29.2 months and 24, p = 0.09). A volumetric index >40% was a negative prognostic factor in young patients (42, 9 vs. 22.9 months, p = 0.06). The rate of relapse among the two groups was found to overlap (27.6% in 1st and 26.9% in 2nd group). Finally, the absence of free margin, the volume of transfusion, and type of resection did not influence survival in any group.

Conclusion
Surgical treatment of HCC is feasible also in the elderly patient. The rate of complications and post-operative

mortality are not significantly higher in elderly, although our data suggests that the long-term outcome is less favorable. For this reason selection of patients over 70 years would be more accurate to offer same results in terms of disease-free survival than expected in the young patients.