

The Chance To Be Cured Following A Liver Resection For Hepatocellular Carcinoma: How Many Years After? A National Multicentric Epidemiologic Study

Flavio MILANA¹, Simone FAMULARO^{*1}, Matteo DONADON¹, Luca ALDRIGHETTI², Matteo CESCONE³, Felice GIULIANTE⁴, Marco VIVARELLI⁵, Alessandro FERRERO⁶, Raffaele DALLA VALLE⁷, Fabrizio ROMANO⁸, Gianluca GRAZI⁹, Marcello MAESTRI¹⁰, Davide BERNASCONI⁸, Guido TORZILLI¹

¹Department Of Hepatobiliary And General Surgery, IRCCS Humanitas Clinical And Research Hospital, Rozzano, Milan, ITALY

²Hepatobiliary Surgery Division, IRCCS San Raffaele Scientific Institute, Milan, ITALY

³General Surgery And Transplantation Unit, University Of Bologna, Bologna, ITALY

⁴Hepatobiliary Surgery Unit, Fondazione "Policlinico Universitario A. Gemelli", Catholic University Of The Sacred Heart, Rome, ITALY

⁵Hepatobiliary And Abdominal Transplantation Surgery, Riuniti Hospital, Polytechnic University Of Marche, Ancona, ITALY

⁶Department Of General And Oncological Surgery, Umberto I Mauriziano Hospital, Turin, ITALY

⁷Department Of Medicine And Surgery, University Of Parma, Parma, ITALY

⁸School Of Medicine And Surgery, University Of Milano-Bicocca, Monza, ITALY

⁹Division Of Hepatobiliary Pancreatic Surgery, IRCCS-Regina Elena National Cancer Institute, Rome, ITALY

¹⁰Unit Of General Surgery, IRCCS San Matteo Hospital Foundation, Pavia, ITALY

Background : The oncologic concept of cure is complicated, especially focusing on hepatocellular carcinoma (HCC) due to high rates of recurrence after resection. Our aim was to measure timing and probability of being cured after surgery comparing a multicentric Italian population affected by HCC to a healthy one.

Methods : Data from patients enrolled in the Italian HCC register (HE.RC.O.LE.S.) from 2009 to 2020 were analyzed. A Weibull-non mixture cure model was employed comparing disease-free-survival (DFS) between HCC patients and the general Italian population matching sex, age and year of diagnosis. The same comparison was carried out subgrouping HCC patients according to tumor stage.

Results : A total of 3351 patients from 30 participating centers were enrolled. Curative resection was achieved in 21% (95%CI:0.17-0.25) of cases increasing during follow-up time and reaching 93.8% at 14 years after surgery without recurrence. Median DFS was 3.2 years (95%CI:2.7-3.9) for no cured patients. BCLC 0-A patients had a cure fraction of 25.5% (95%CI:0.21-0.29), BCLC B of 9.2% (95%CI:0.06-1.13) and BCLC C 13.5% (95%CI:0.09-1.17). Focusing on potential years of life lost (PYLL), with an early recurrence (<2 years after liver resection) patients lost 8.34 years (95%CI:7.68-8.99) from their life expectancy. Healthy population lifespan is recovered after 15 years from surgery with no recurrence.

Conclusions : The probabilities to be cured from HCC rise at an increase of time without recurrence after resection. Anyway, patients need at least 15 years follow-up time before they could be declared cured. These data may contribute to better inform patients and to improve follow-up protocols.

Corresponding Author : **Simone FAMULARO** (simone.famularo@gmail.com)