Supplementary Table 1. Screening procedure of variables by nonparametric log-rank test.

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| **Variables** | ***P*-value for log-rank test** |
| **Sex** | 0.30 |
| **Age at diagnosis, years** | 0.13 |
| **BMI at diagnosis, kg/m2** | 0.03 |
| **Education level, n (%)** | 0.00 |
| Primary school or below |  |
| Secondary & High school |  |
| College or above |  |
| **Residence, n (%)** | 0.09 |
| Urban |  |
| Rural |  |
| **Smoking status, n (%)** | 0.02 |
| Current |  |
| former |  |
| Never |  |
| **Alcohol drinking status, n (%)** | 0.53 |
| Current |  |
| former |  |
| Never |  |
| **With family history of PLC, n (%)** | 0.24 |
| **HBV or HCV infected, n (%)** | 0.53 |
| **AFP≥400 ng/L, n (%)** | <0.001  |
| **CRP≥3.0 mg/L, n (%)** | <0.001  |
| **Presence of chronic diseases, n (%)** |  |
| Hypertension | 0.10 |
| Diabetes mellitus | 0.13 |
| Fatty liver | <0.001  |
| Cirrhosis | <0.001  |
| **Baseline liver damage level, n (%)** | <0.001  |
| 1 |  |
| 2 |  |
| 3 |  |
| **Child-Pugh class, n (%)** | 0.00 |
| A |  |
| B |  |
| **BCLC stage, n (%)** | <0.001  |
| 0 |  |
| A |  |
| B |  |
| C |  |
| **Treatment, n (%)** | <0.001  |
| Liver resection |  |
| Radiofrequency ablation |  |
| Intervention  |  |
| Others |  |
| **Serum choline(μmol/L)** |  |
| Median |  |
| Interquartile range |  |
| **Serum betaine(μmol/L)** |  |
| Median |  |
| Interquartile range |  |
| **Serum folate(μmol/L)** | 0.09 |
| Median |  |
| Interquartile range | 　 |