**Table S2. Univariable Cox regression model showing the association of pathological signatures with RFS in the Zhongshan cohort.**

|  |  |
| --- | --- |
| Pathological signatures | Univariate analysis |
| HR | 95%CI | *p* value |
| m0\_glcm\_ClusterShade\_val | 0.692  | (0.556-0.863) | 0.001 |
| m0\_glcm\_JointAverage\_deciles | 0.848  | (0.730-0.986) | 0.032 |
| m0\_glszm\_LargeAreaHighGrayLevelEmphasis\_deciles | 1.191 | (1.062-1.336) | 0.003 |
| m0\_proportion | 0.375  | (0.169-0.83) | 0.016 |
| m1\_glrlm\_ShortRunLowGrayLevelEmphasis\_val | 0.821  | (0.694-0.970) | 0.021 |
| m1\_glszm\_SmallAreaHighGrayLevelEmphasis\_val | 1.135  | (1.023-1.258) | 0.016 |
| m1\_ngtdm\_Complexity\_val | 0.813  | (0.681-0.971) | 0.023 |
| m1\_firstorder\_Minimum\_median | 2.312  | (1.496-3.576) | 0.00016 |
| m1\_glszm\_SmallAreaLowGrayLevelEmphasis\_median | 1.218  | (1.084-1.367) | 0.00087 |
| m1\_ngtdm\_Busyness\_median | 0.822  | (0.708-0.954) | 0.01 |
| m2\_glcm\_Imc2\_mean | 0.866  | (0.758-0.989) | 0.033 |
| m2\_gldm\_LargeDependenceLowGrayLevelEmphasis\_val | 1.095  | (1.003-1.197) | 0.044 |
| m2\_gldm\_DependenceVariance\_median | 1.134  | (1.029-1.251) | 0.011 |
| m2\_gldm\_LargeDependenceLowGrayLevelEmphasis\_median | 1.112  | (1.031-1.199) | 0.0057 |
| m2\_gldm\_SmallDependenceLowGrayLevelEmphasis\_median | 1.154  | (1.014-1.312) | 0.029 |
| m2\_glszm\_LargeAreaLowGrayLevelEmphasis\_deciles | 1.100  | (1.014-1.194) | 0.022 |
| m2\_gldm\_SmallDependenceHighGrayLevelEmphasis\_deciles | 0.836 | (0.725-0.965) | 0.015 |
| m3\_firstorder\_Minimum\_mean | 1.395  | (1.061-1.835) | 0.017 |
| m3\_firstorder\_Range\_mean | 0.876  | (0.779-0.985) | 0.026 |
| m3\_glcm\_MaximumProbability\_mean | 1.394  | (1.26-1.542) | 1.20E-10 |
| m3\_glrlm\_GrayLevelNonUniformity\_mean | 1.165  | (1.037-1.309) | 0.010 |
| m3\_glszm\_SmallAreaLowGrayLevelEmphasis\_mean | 1.138  | (1.039-1.245) | 0.0052 |
| m3\_gldm\_DependenceVariance\_mean | 1.330 | (1.175-1.506) | 6.60E-06 |
| m3\_glszm\_ZoneEntropy\_val | 0.813  | (0.675-0.979) | 0.029 |
| m3\_gldm\_DependenceVariance\_val | 1.188  | (1.07-1.32) | 0.0013 |
| m3\_glszm\_SizeZoneNonUniformity\_median | 1.149  | (1.008-1.311) | 0.038 |
| m3\_firstorder\_Variance\_deciles | 0.847  | (0.721-0.994) | 0.042 |
| m3\_glcm\_InverseVariance\_deciles | 1.156  | (1.031-1.297) | 0.013 |
| m3\_ngtdm\_Busyness\_deciles | 1.182 | (1.046-1.335) | 0.0073 |
| m4\_firstorder\_Kurtosis\_deciles | 0.843  | (0.72-0.987) | 0.033 |
| m4\_gldm\_DependenceNonUniformityNormalized\_deciles | 0.788  | (0.664-0.935) | 0.0065 |
| m4\_gldm\_SmallDependenceHighGrayLevelEmphasis\_deciles | 0.863  | (0.748-0.995) | 0.042 |
| m5\_shape\_Elongation\_val | 0.883  | (0.813-0.96) | 0.0033 |
| m5\_glrlm\_ShortRunLowGrayLevelEmphasis\_val | 0.854  | (0.735-0.993) | 0.041 |
| m5\_ngtdm\_Strength\_val | 1.147  | (1.036-1.27) | 0.0085 |
| m5\_firstorder\_Minimum\_median | 1.563 | (1.117-2.188) | 0.0092 |
| m5\_glrlm\_LongRunEmphasis\_median | 1.14  | (1.038-1.252) | 0.0061 |
| m5\_glrlm\_ShortRunLowGrayLevelEmphasis\_median | 1.179  | (1.038-1.341) | 0.012 |
| m5\_glcm\_Correlation\_deciles | 1.183  | (1.04-1.346) | 0.011 |
| m5\_ngtdm\_Contrast\_deciles | 1.204  | (1.062-1.365) | 0.0037 |

∗m0, normal liver tissue; m1, portal area; m2, fibrosis; m3, lymphocyte concentration area; m4, tumor region; m5, hemorrhage/necrotic area.