**Table 1. Clinical and morphological characteristics of the patients with renal cell cancer**

|  |  |
| --- | --- |
| **Parameter** | **Number of cases, N (%)** |
| Age | |
| ≤ 60 years | 71 (51) |
| > 60 years | 69 (49) |
| Gender | |
| Male | 87 (62) |
| Female | 53 (38) |
| Histology | |
| ccRCC | 84 (60) |
| papRCC | 38 (27) |
| chrRCC | 18 (13) |
| Stage | |
| I | 58 (41) |
| II | 27 (19) |
| III | 33 (24) |
| IV | 22 (16) |
| Tumor size (Т) | |
| T1–T2 | 93 (66) |
| T3–T4 | 47 (34) |
| Regional metastases (N) | |
| N0 | 124 (89) |
| N+ | 16 (11) |
| Distant metastases (M) | |
| M0 | 120 (86) |
| M+ | 20 (14) |
| Fuhrman grade (G) | |
| G1–G2 | 88 (63) |
| G3–G4 | 52 (37) |

ccRCC, clear cell renal carcinoma; chrRCC, chromophobe renal cell carcinoma; papRCC, papillary renal cell carcinoma

**Table 2. Association of serum galectin-1 and -7 levels with clinical and morphological characteristics of the patients with renal cell carcinoma**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameter** | **Galectin-1, ng/mL** | | |  | **Galectin-7, pg/mL** | | |
| **Median** | **25%; 75%** | **P value** | | **Median** | **25%; 75%** | **P value** |
| **Age, years** | | | | | | | |
| ≤ 60 | 31.45 | 23.99; 40.46 | 0.779 | | 29.56 | 20.05; 50.55 | 0.918 |
| > 60 | 32.60 | 21.99; 44.50 | 31.76 | 19.58; 51.07 |
| Gender | | | | | | | |
| Male | 30.86 | 23.56; 40.56 | 0.358 | | 32.13 | 22.78; 56.79 | 0.079 |
| Female | 33.75 | 22.91; 45.86 | 27.44 | 17.41; 40.91 |
| Histology | | | | | | | |
| 1. ccRCC | 32.60 | 25.01; 44.20 | 1 vs 2 > 0.999 | | 31,39 | 19.11; 55.83 | 1 vs 2 > 0.999 |
| 2. papRCC | 33.01 | 21.70; 44.90 | 1 vs 3 = 0.194 | | 28.88 | 20.05; 44.70 | 1 vs 3 > 0.999 |
| 3. chrRCC | 24.33 | 20.25; 36.03 | 2 vs 3 = 0.492 | | 33.83 | 25.05; 46.58 | 2 vs 3 > 0.999 |
| Stage | | | | | | | |
| I–II | 30.81 | 22.80; 41.88 | 0.376 | | 32.13 | 22.47; 53.80 | 0.297 |
| III–IV | 32.60 | 23.65; 44.23 | 26.06 | 19.11; 42.13 |
| Tumor size | | | | | | | |
| T1–T2 | 30.81 | 22.80; 41.20 | 0.296 | | 32.13 | 20.18; 52.93 | 0.595 |
| T3–T4 | 32.87 | 23.65; 45.70 | 28.88 | 20.05; 46.58 |
| Regional metastases | | | | | | | |
| N0 | 30.88 | 23.28; 42.97 | 0.339 | | 32.13 | 20.11; 49.56 | 0.487 |
| N+ | 33.01 | 27.15; 44.37 | 25.83 | 17.69; 50.21 |
| Distant metastases | | | | | | | |
| M0 | 32.03 | 23.02; 43.49 | 0.540 | | 31.95 | 20.05; 52.34 | 0.890 |
| M+ | 31.47 | 25.17; 41.88 | 27.47 | 20.05; 46.67 |
| Fuhrman grade | | | | | | | |
| G1–G2 | 32.60 | 23.93; 44.90 | 0.6291 | | 35.52 | 20.30; 58.91 | 0.097 |
| G3–G4 | 32.86 | 23.58; 43.29 | 25.59 | 19.35; 39.83 |

ccRCC, clear cell renal carcinoma; chrRCC, chromophobe renal cell carcinoma; papRCC, papillary renal cell carcinoma

**Table 3. Analysis of the correlation between serum galectin-1 levels and clinical and morphological characteristics of renal cell carcinoma of various morphological types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **ccRCC** | **papRCC** | **chrRCC** |
| Galectin-1 vs age | r = -0.194; p = 0.078 | r = -0.216; p = 0.194 | r = -0.216; p = 0.388 |
| Galectin-1 vs gender | r = 0.165; p = 0.134 | r = -0.017; p = 0.917 | r = -0.065; p = 0.799 |
| Galectin-1 vs stage | r = 0.161; p = 0.143 | r = 0.048; p = 0.774 | r = -0.132; p = 0.602 |
| Galectin-1 vs Т | r = 0.175; p = 0.112 | r = 0.052; p = 0.755 | r = -0.055; p = 0.827 |
| Galectin-1 vs N | r = 0.054; p = 0.623 | r = 0.045; p = 0.788 | r = 0.171; p = 0.499 |
| Galectin-1 vs M | r = 0.076; p = 0.490 | r = -0.051; p = 0.762 | r = -0.023; p = 0.927 |
| Galectin-1 vs G | r = -0.026; p = 0.813 | r = -0.096; p = 0.632 | r = 0.169; p > 0.999 |

ccRCC, clear cell renal carcinoma; chrRCC, chromophobe renal cell carcinoma; G, Fuhrman grade; M, distant metastases; N, regional metastases; papRCC, papillary renal cell carcinoma;  
T, tumor size

**Table 4. Analysis of the correlation between serum galectin-7 and clinical and morphological characteristics of renal cell carcinoma of various morphological types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **ccRCC** | **papRCC** | **chrRCC** |
| Galectin-7 vs age | r = 0.004; p = 0.975 | r = -0.108; p = 0.519 | r = 0.139; p = 0.582 |
| Galectin-7 vs gender | r = -0.264; p = 0.015\* | r = 0.032; p = 0.846 | r = 0.043; p = 0.860 |
| Galectin-7 vs stage | r = -0.081; p = 0.464 | r = -0.219; p = 0.185 | r = -0.181; p = 0.472 |
| Galectin-7 vs Т | r = -0.050; p = 0.649 | r = -0.207; p = 0.212 | r = -0.104; p = 0.681 |
| Galectin-7 vs N | r = 0.030; p = 0.786 | r = -0.168; p = 0.314 | r = -0.205; p = 0.414 |
| Galectin-7 vs M | r = 0.016; p = 0.885 | r = -0.109; p = 0.511 | r = 0.117; p = 0.643 |
| Galectin-7 vs G | r = -0.027; p = 0.807 | r = -0.592; p = 0.001\* | r = -0.4287; p = 0.533 |

ccRCC, clear cell renal carcinoma; chrRCC, chromophobe renal cell carcinoma; G, Fuhrman grade; M, distant metastases; N, regional metastases; papRCC, papillary renal cell carcinoma;  
T, tumor size

\* The correlation is significant

**Table 5. Association of serum galectin-3 levels with clinical and morphological characteristics of the patients with renal cell carcinoma**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **Galectin-3, ng/mL** | | |
| **Median** | **25%; 75%** | **P value** |
| **Age, years** | | | |
| ≤ 60 | 10.20 | 7.870; 13.53 | 0.831 |
| > 60 | 10.00 | 8.305; 12.29 |
| Gender | | | |
| Male | 9.140 | 7.720; 12.21 | 0.006\* |
| Female | 10.82 | 9.220; 15.67 |
| Histology | | | |
| 1. ccRCC | 9.880 | 7.885; 11.79 | 1 vs 2 = 0.408 |
| 2. papRCC | 10.45 | 8.098; 14.91 | 1 vs 3 = 0.261 |
| 3. chrRCC | 12.06 | 8.595; 14.99 | 2 vs 3 > 0.999 |
| Stage | | | |
| I–II | 10.10 | 8.000; 12.67 | 0.585 |
| III–IV | 10.17 | 8.090; 14.88 |
| Tumor size | | | |
| T1–T2 | 10.17 | 8.065; 12.67 | 0.889 |
| T3–T4 | 9.950 | 8.030; 14.88 |
| Regional metastases | | | |
| N0 | 10.09 | 7.975; 12.54 | 0.111 |
| N+ | 10.81 | 9.113; 16.39 |
| Distant metastases | | | |
| M0 | 10.00 | 8.053; 12.54 | 0.204 |
| M+ | 10.99 | 8.938; 16.12 |
| Fuhrman grade | | | |
| G1–G2 | 9.660 | 7.830; 12.40 | 0.615 |
| G3–G4 | 10.08 | 8.498; 11.97 |

ccRCC, clear cell renal carcinoma; chrRCC, chromophobe renal cell carcinoma; G, Fuhrman grade; M, distant metastases; N, regional metastases; papRCC, papillary renal cell carcinoma;  
T, tumor size

**Table 6. Analysis of the correlation between serum galectin-3 and clinical and morphological characteristics of renal cell carcinoma of various morphological types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **ccRCC** | **papRCC** | **chrRCC** |
| Galectin-3 vs age | r = 0.364; p = 0.0007\* | r = -0.197; p = 0.236 | r = 0.089; p = 0.725 |
| Galectin-3 vs gender | r = 0.401; p = 0.0002\* | r = -0.055; p = 0.744 | r = 0.021; p = 0.932 |
| Galectin-3 vs stage | r = 0.186; p = 0.089 | r = 0.138; p = 0.407 | r = -0.249; p = 0.319 |
| Galectin-3 vs Т | r = 0.210; p = 0.055 | r = 0.062; p = 0.712 | r = -0.250; p = 0.316 |
| Galectin-3 vs N | r = 0.048; p = 0.666 | r = 0.255; p = 0.123 | r = 0.170; p = 0.499 |
| Galectin-3 vs M | r = 0.074; p = 0.502 | r = 0.250; p = 0.129 | r = 0.210; p = 0.402 |
| Galectin-3 vs G | r = 0.075; p = 0.504 | r = -0.076; p = 0.705 | r = -0.169; p > 0.999 |

ccRCC, clear cell renal carcinoma; chrRCC, chromophobe renal cell carcinoma; G, Fuhrman grade; M, distant metastases; N, regional metastases; papRCC, papillary renal cell carcinoma;  
T, tumor size

\* The correlation is significant

**Table 7. Association of serum galectin -4 and -9 levels with clinical and morphological characteristics of the patients with renal cell carcinoma**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameter** | **Galectin-4, pg/mL** | | |  | **Galectin-9, ng/mL** | | |
| **Median** | **25%; 75%** | **P value** | | **Median** | **25%; 75%** | **P value** |
| **Age, years** | | | | | | | |
| ≤ 60 | 506.1 | 286.0; 928.2 | 0.050\* | | 8.830 | 6.430; 12.03 | 0.365 |
| > 60 | 698.5 | 419.5; 1326 | 9.550 | 7.185; 13.87 |
| Gender | | | | | | | |
| Male | 540.5 | 295.2; 829.3 | 0.079 | | 8.940 | 6.940; 12.03 | 0.357 |
| Female | 698.5 | 381.0; 1383 | 9.550 | 6.795; 17.40 |
| Histology | | | | | | | |
| 1. ccRCC | 589.7 | 329.3; 1329 | 1vs 2 > 0.999 | | 9.455 | 7.315; 13.38 | 1 vs 2 > 0.999 |
| 2. papRCC | 549.5 | 398.6; 854.4 | 1 vs 3 = 0.436 | | 9.450 | 6.510; 12.18 | 1 vs 3 = 0.408 |
| 3. chrRCC | 417.8 | 272.3; 928.2 | 2 vs 3 > 0.999 | | 7.880 | 6.185; 10.57 | 2 vs 3 > 0.999 |
| Stage | | | | | | | |
| I–II | 601.6 | 276.3; 1350 | 0.866 | | 9.270 | 7.085; 12.06 | 0.985 |
| III–IV | 570.7 | 396.6; 836.2 | 9.090 | 6.430; 14.31 |
| Tumor size | | | | | | | |
| T1–T2 | 565.1 | 276.3; 1350 | 0.867 | | 9.190 | 6.965; 12.10 | 0.716 |
| T3–T4 | 576.2 | 437.4; 836.2 | 9.170 | 6.550; 13.24 |
| Regional metastases | | | | | | | |
| N0 | 559.4 | 315.7; 1299 | 0.993 | | 8.895 | 6.873; 12.11 | 0.058 |
| N+ | 595.5 | 464.4; 776.3 | 11.44 | 7.355; 23.99 |
| Distant metastases | | | | | | | |
| M0 | 589.7 | 296.3; 1281 | 0.701 | | 9.230 | 6.995; 12.27 | 0.717 |
| M+ | 571.5 | 457.9; 827.0 | 9.055 | 5.665; 14.04 |
| Fuhrman grade | | | | | | | |
| G1–G2 | 650.7 | 338.5; 1306 | 0.744 | | 8.520 | 7.010; 13.43 | 0.368 |
| G3–G4 | 574.3 | 332.8; 1303 | 9.995 | 7.095; 13.24 |

ccRCC, clear cell renal carcinoma; chrRCC, chromophobe renal cell carcinoma; G, Fuhrman grade; M, distant metastases; N, regional metastases; papRCC, papillary renal cell carcinoma;  
T, tumor size

\* The difference between the groups is significant

**Table 8. Analysis of the correlation between serum galectin-4 and clinical and morphological characteristics of renal cell carcinoma of various morphological types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **ccRCC** | **papRCC** | **chrRCC** |
| Galectin-4 vs age | r = 0.266; p = 0.015\* | r = -0.125; p = 0.454 | r = 0.304; p = 0.220 |
| Galectin-4 vs gender | r = 0.118; p = 0.286 | r = 0.294; p = 0.074 | r = -0.075; p = 0.766 |
| Galectin-4 vs stage | r = -0.012; p = 0.909 | r = -0.072; p = 0.668 | r = 0.032; p = 0.899 |
| Galectin-4 vs Т | r = 0.009; p = 0.934 | r = -0.080; p = 0.632 | r = 0.149; p = 0.552 |
| Galectin-4 vs N | r = 0.011; p = 0.921 | r = 0.004; p = 0.982 | r = -0.102; p = 0.686 |
| Galectin-4 vs M | r = 0.032; p = 0.769 | r = -0.003; p = 0.981 | r = 0.023; p = 0.927 |
| Galectin-4 vs G | r = 0.096; p = 0.391 | r = -0.309; p = 0.116 | r = 0.169; p > 0.999 |

ccRCC, clear cell renal carcinoma; chrRCC, chromophobe renal cell carcinoma; G, Fuhrman grade; M, distant metastases; N, regional metastases; papRCC, papillary renal cell carcinoma;  
T, tumor size

\* The correlation is significant

**Table 9. Analysis of the correlation between serum galectin-9 and clinical and morphological characteristics of renal cell carcinoma of various morphological types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **ccRCC** | **papRCC** | **chrRCC** |
| Galectin-9 vs age | r = 0.216; p = 0.048\* | r = 0.012; p = 0.943 | r = -0.254; p = 0.309 |
| Galectin-9 vs gender | r = 0.108; p = 0.324 | r = 0.029; p = 0.858 | r = 0.064; p = 0.798 |
| Galectin-9 vs stage | r = 0.146; p = 0.185 | r = -0.098; p = 0.554 | r = -0.199; p = 0.428 |
| Galectin-9 vs Т | r = 0.251; p = 0.021\* | r = -0.152; p = 0.363 | r = -0.051; p = 0.842 |
| Galectin-9 vs N | r = 0.239; p = 0.028\* | r = 0.063; p = 0.707 | r = 0.068; p = 0.788 |
| Galectin-9 vs M | r = -0.021; p = 0.848 | r = 0.023; p = 0.888 | r = -0.397; p = 0.102 |
| Galectin-9 vs G | r = 0.124; p = 0.265 | r = -0.033; p = 0.871 | r = -0.169; p > 0.999 |

ccRCC, clear cell renal carcinoma; chrRCC, chromophobe renal cell carcinoma; G, Fuhrman grade; M, distant metastases; N, regional metastases; papRCC, papillary renal cell carcinoma;  
T, tumor size

\* The correlation is significant