|  |  |  |  |
| --- | --- | --- | --- |
|  | severe RLS(n=50) | mild to moderate RLS(n=84) | p |
| Sex (men), % | 42.0 | 38.8 | 0.383 |
| Age, y | 39.76±11.38 | 37.98±11.10 | 0.373 |
| Hypertension, % | 18 （9） | 14.1（12） | 0.625 |
| Diabetes mellitus, % | 6.0 | 2.4 | 0.359 |
| Smoking, % | 16.0 | 15.3 | 1.000 |
| BSA, m2 | 1.73±0.22 | 1.72±0.18 | 0.674 |
| Cryptogenic  Stroke, % | 39.6 | 38.5 | 1.000 |
| Migraine, % | 64% | 63.5% | 1.000 |
| Eustachian valve or a Chiari’s network, % | 10.0% | 5.9% | 0.499 |
| Left funnelform, % | 28.0% | 31.8% | 0.701 |
| right funnelform, % | 26.0% | 21.2% | 0.532 |
| FO length (cm) | 1.74±0.3 | 1.60±0.4 | 0.039 |
| FO short (cm) | 1.12±0.3 | 1.00±0.3 | 0.036 |
| FO circumference (cm) | 4.62±0.7 | 4.22±1.0 | 0.026 |
| FO area (cm2) | 1.80±0.8 | 1.35±0.8 | 0.05 |
| PFO tunnel height (mm) | 1.4±0.6 | 0.9±0.6 | ＜0.001 |
| PFO tunnel length (mm) | 10.2±3.7 | 9.7±4.6 | 0.585 |
| Primary septum thickness (mm) | 1.2±0.3 | 1.3±0.4 | 0.172 |
| Septum secundum thickness (mm) | 3.7±1.0 | 3.5±1.0 | 0.369 |
| RoPE score | 6.6±1.5 | 6.8±1.7 | 0.463 |
| multiple exits of the tunnel of LA, % | 28 | 27.1 | 1.000 |

Table 1: The characteristics of patients and PFO

Note: Values are presented as mean±SD or n (%).

Abbreviation: PFO, patent foramen ovale. RoPe, risk of paradoxical embolism. BMI, body mass index. FO, fossa ovale. RLS, right-to-left shunts. LA, left atrium.

Table 2: Comparison of basic characteristics and echocardiographic features between the cryptogenic group and the migraine group.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Cryptogenic | Migraine | P |
| SEX（Men）,% | 59.2% | 30.25% | 0.002 |
| Age, y | 41.9±8.6 | 36.8±12.1 | 0.01 |
| Hypertension, % | 26.5% | 9.3% | 0.012 |
| Diabetes mellitus, % | 8.2% | 1.2% | 0.058 |
| Smoking, % | 30.6% | 3.0% | ＜0.001 |
| BSA,m2 | 1.8±0.2 | 1.7±0.2 | 0.3 |
| Eustachian valve or a Chiari’s network, % | 14.3% | 3.5% | 0.036 |
| Left funnelform, % | 55.1% | 16.3% | ＜0.001 |
| right funnelform, % | 24.5% | 22.1% | 0.832 |
| FO length (cm) | 1.67±0.4 | 1.63±0.4 | 0.569 |
| FO short (cm) | 1.14±0.3 | 1.00±0.3 | 0.015 |
| FO circumference (cm) | 4.5±0.9 | 4.3±1.0 | 0.212 |
| FO area (cm2) | 1.79±0.8 | 1.36±0.8 | 0.063 |
| PFO tunnel height (mm) | 1.2±0.6 | 1.0±0.6 | 0.229 |
| PFO tunnel length (mm) | 13.4±4.4 | 7.8±2.5 | ＜0.001 |
| Primary septum thickness (mm) | 1.3±0.4 | 1.2±0.4 | 0.256 |
| Septum secundum thickness(mm) | 3.8±1.1 | 3.4±0.9 | 0.062 |
| IVC-PFO angle | 16.4±3.4 | 20.3±7.7 | 0.001 |
| cerebral vessels, % | 8.2%（4） | 0 | 0.016 |
| carotid vessels, % | 53.1%（26） | 20.9%（18） | 0.001 |
| RLS Shunt 0 | 2.0 | 1.2 |  |
| 1 | 18.4 | 16.5 |  |
| 2 | 42.9 | 44.7 | 0.969 |
| 3 | 36.7 | 37.6 |  |
| TCD Shunt 0 | 2.0 | 3.5 |  |
| 1 | 16.3 | 12.8 | 0.907 |
| 2 | 34.7 | 37.2 |  |
| 3 | 46.9 | 46.5 |  |
| RoPE score | 7.6±1.1 | 6.3±1.4 | ＜0.001 |
| Multiple exits of the tunnel of LA, % | 46.9 | 14.3 | ＜0.001 |

Note: Values are mean±SD or n (%).

Abbreviation: PFO, patent foramen ovale. RoPe, risk of paradoxical embolism. BMI, body mass index. FO, fossa ovale. RLS, right-to-left shunts. LA, left atrium. TCD, transcranial doppler. IVC, inferior vena cava.

Table 3: Multivariate logistic regression analysis for the echocardiographic characteristics of the cryptogenic group and the migraine group.

|  |  |  |  |
| --- | --- | --- | --- |
|  | β | 95%CI | P |
| Sex(men), % | 4.026 | （0.883~18.361） | 0.072 |
| Age, y | 1.076 | （1.002~1.155） | 0.045 |
| Left funnelform, % | 7.299 | （1.585~33.618） | 0.011 |
| PFO tunnel length (mm) | 1.843 | （1.404~2.418） | ＜0.001 |
| multiple exits of the tunnel of LA, % | 8.544 | (1.595~45.754) | 0.012 |

Note:

Abbreviation: PFO, patent foramen ovale. LA, left atrium.