**Supplementary Table 1 Detailed characteristics of selected patients.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Pre-ERCP +LC****（n=300）** | **Io-ERCP +LC****（n=314）** | **LC+LCCBDE+Duodenoscope （n=94）** | **LCTD+LC****（n=95）** | **LC+LCCBDE+****primary closure****（n=86）** | **LTC-CBDE +LC****（n=155）** | **P** **value** |
| **Age** | 58.5±12.4 | 59.6±15.2 | 54.2±14.8 | 51.0±14.7 | 55.5±11.6 | 50.9±14.3 | 0.415 |
| **Gender (female)** | 182 (60.7%) | 197 (62.7%) | 46 (48.9%) | 44 (46.3%) | 41 (47.7%) | 82 (52.9%) | 0.664 |
| **ASA grade** | 2.3±0.4 | 1.7±0.2 | 2.1±0.3 | 1.8±0.5 | 1.9±0.4 | 1.6±0.3 | 0.707 |
| **Body mass index**  | 22.1±2.5 | 22.5±3.1 | 23.0±3.4 | 21.5±3.0 | 22.4±2.6 | 22.7±2.2 | 0.349 |
| **Medical history**  |  |  |  |  |  |  |  |
| **Diabetes** | 51 (17.0%) | 41 (13.1%) | 12 (12.8%) | 10 (10.5%) | 12 (14.0%) | 30 (19.4%) | 0.905 |
| **Hypertension** | 54 (18.0%) | 63 (20.1%) | 15 (16.0%) | 11 (11.6%) | 17 (19.8%) | 35 (22.6%) | 0.968 |
| **Liver function** |  |  |  |  |  |  |  |
| **TBIL (µmol/L)** | 57.8±14.1 | 67.9±15.9 | 73.9±21.5 | 72.7±20.3 | 90.7±25.4 | 69.4±18.9 | 0.084 |
| **ALT level (U/L)** | 216.8±56.8 | 189.7±51.0 | 199.9±56.2 | 201.2±60.7 | 191.1±53.3 | 203.3±55.1 | 0.328 |
| **AST level (U/L)** | 146.8±47.9 | 174.1±49.3 | 227.3±52.9 | 135.7±54.6 | 199.2±59.6 | 156.6±50.1 | 0.162 |
| **γ-GT (U/L)** | 307.1±93.3 | 422.9±90.6 | 361.0±81.9 | 464.0±101.8 | 311.3±108.9 | 343.5±98.0 | 0.471 |
| **ALP (U/L)** | 298.3±72.7 | 281.7±81.0 | 260.2±79.0 | 312.4±77.1 | 326.1±82.5 | 286.9±90.5 | 0.108 |
| **Presentation**  |  |  |  |  |  |  |  |
| **Colic**  | 194 (64.7%) | 236 (75.2%) | 55 (58.5%) | 51 (53.7%) | 50 (58.1%) | 78 (50.3%) | 0.990 |
| **Fever** | 79 (26.3%) | 99 31.5%) | 22 (23.4%) | 20 (21.1%) | 22 (25.6%) | 30 (19.4%) | 0.994 |
| **Nausea/vomiting** | 212 (63.1%) | 240 (62.3%) | 66 (70.2%) | 62 (65.3%) | 52 (60.5%) | 59 (38.1%) | 0.979 |