

## Supplementary material

Supplementary Table 1. Clinical Characteristics of the study patients with acromegaly.

| Variables           | Total number of patients<br>(n = 86) | Patients without polyps<br>(n = 51) | Patients with polyps<br>(n = 35) | P-value |
|---------------------|--------------------------------------|-------------------------------------|----------------------------------|---------|
| Height (m)          | 1.65 ± 0.09                          | 1.67 ± 0.09                         | 1.63 ± 0.09                      | 0.097   |
| Weights (Kg)        | 71.41 ± 10.65                        | 72.22 ± 11.23                       | 70.24 ± 9.79                     | 0.389   |
| SBP (mmHg)          | 124 (115.5, 138.75)                  | 125 (119.5, 141.5)                  | 123 (115, 134)                   | 0.547   |
| DBP (mmHg)          | 80.08 ± 12.32                        | 79.86 ± 12.96                       | 80.4 ± 11.51                     | 0.84    |
| HGB (g/L)           | 127 (119, 136)                       | 128 (120, 137)                      | 127 (118, 136)                   | 0.541   |
| HbA1c (%)           | 5.9 (5.6, 7.03)                      | 5.9 (5.6, 7.2)                      | 5.9 (5.5, 6.2)                   | 0.508   |
| TG (mmol/L)         | 1.53 (1.13, 2.14)                    | 1.5 (1.12, 2.3)                     | 1.57 (1.2, 2.06)                 | 0.919   |
| TC (mmol/L)         | 4.2 (3.57, 4.95)                     | 4.16 (3.64, 5)                      | 4.3 (3.19, 4.66)                 | 0.406   |
| HDL-C (mmol/L)      | 1.13 (1, 1.32)                       | 1.12 (1.01, 1.3)                    | 1.17 (0.99, 1.35)                | 0.527   |
| LDL-C (mmol/L)      | 2.53 ± 0.71                          | 2.55 ± 0.7                          | 2.49 ± 0.74                      | 0.717   |
| Urea (mmol/L)       | 4.61 ± 1.29                          | 4.61 ± 1.39                         | 4.62 ± 1.16                      | 0.969   |
| CREA (μmol/L)       | 54.2 (44.15, 66.45)                  | 55.2 (44.8, 68.05)                  | 53.4 (44.3, 64.65)               | 0.638   |
| eGFR (mL/min/L)     | 115 (105.54, 124.88)                 | 116.52 (106.59, 128.44)             | 113 (104.66, 117.29)             | 0.094   |
| UA (μmol/L)         | 296.65 (227.68, 354.03)              | 277.5 (227.95, 349.05)              | 301 (227.3, 359.95)              | 0.715   |
| GHPA volume, n (%)  |                                      |                                     |                                  | 0.401   |
| < 1 cm <sup>3</sup> | 17 (20)                              | 11 (22)                             | 6 (17)                           |         |
| 1–4 cm <sup>3</sup> | 37 (43)                              | 24 (47)                             | 13 (37)                          |         |
| ≥ 4 cm <sup>3</sup> | 32 (37)                              | 16 (31)                             | 16 (46)                          |         |

Data are shown as mean ± SD for variables of normal distribution and median with the interquartile range (25-75%) for skewed variables.

HR: heart rate; SBP: systolic blood pressure; DBP: diastolic blood pressure; HGB: hemoglobin; FBG: fasting blood glucose; HbA1c: hemoglobin A1c; TG: triglycerides; TC: total cholesterol; LDL-C: low-density lipoprotein cholesterol; HDL-C: high-density lipoprotein cholesterol; CREA: creatinine; eGFR: estimated glomerular filtration rate; UA: uric acid; SD: standard deviation

\*: P<0.05.

Supplementary Table 2. The clinical indicators, distribution at different sites, size, and THE number of colonic polyps in acromegaly patients included in this study.

|                | The site distribution of polyps <sup>a</sup> |                        |                         | The size of polyps |                        | <i>P</i> value | The number of polyps     |                             | <i>P</i> value |
|----------------|--|------------------------|-------------------------|--------------------|------------------------|----------------|--------------------------|-----------------------------|----------------|
|                | right colon<br>(n = 4)                       | left colon<br>(n = 19) | whole colon<br>(n = 12) | ≤5mm<br>(n = 25)   | > 5mm<br>(n = 10)      |                | Single polyp<br>(n = 13) | Multiple polyps<br>(n = 22) |                |
| Height (m)     | 1.59 ± 0.1                                   | 1.65 ± 0.09            | 1.63 ± 0.09             | 1.63 ± 0.09        | 1.64 ± 0.09            | 0.83           | 1.65 ± 0.1               | 1.63 ± 0.08                 | 0.549          |
| Weights (Kg)   | 68.78 ± 11.3                                 | 70.96 ± 9.7            | 69.58 ± 10.27           | 69.02 ± 9.72       | 73.29 ± 9.77           | 0.258          | 66.82 ± 10.6             | 72.26 ± 8.91                | 0.113          |
| SBP (mmHg)     | 129.5 (122.25, 147)                          | 123 (119, 136)         | 118.5 (112.25, 132.25)  | 121 (115, 133)     | 130.5 (115.25, 144.75) | 0.571          | 121 (115, 133)           | 123.5 (116.25, 134.5)       | 0.785          |
| DBP (mmHg)     | 79.75 ± 18.46                                | 81.42 ± 10.11          | 79 ± 12.05              | 79.68 ± 11         | 82.2 ± 13.15           | 0.6            | 80.31 ± 13.11            | 80.45 ± 10.78               | 0.972          |
| HGB (g/L)      | 133 (124.75, 133.25)                         | 127 (118.5, 138)       | 124 (117, 136.25)       | 126.88 ± 21.93     | 125.4 ± 12.96          | 0.807          | 133 (120, 136)           | 122 (118, 134.75)           | 0.505          |
| FGB            | 6.96 (5.95, 8.05)                            | 5.08 (4.34, 5.36)      | 5.02 (4.61, 7.28)       | 5.33 (4.32, 5.85)  | 5.46 (4.92, 7.32)      | 0.25           | 5.08 (4.29, 6.04)        | 5.33 (4.83, 6.37)           | 0.573          |
| HbA1c (%)      | 6.7 (5.68, 7.82)                             | 5.85 (5.53, 6.18)      | 5.9 (5.6, 10.3)         | 5.8 (5.5, 6.2)     | 6 (5.7, 7.4)           | 0.188          | 5.8 (5.5, 6.2)           | 5.9 (5.57, 6.25)            | 0.471          |
| TG (mmol/L)    | 1.91 (1.51, 2.27)                            | 1.49 (1.15, 2.14)      | 1.55 (1.1, 1.97)        | 1.71 ± 0.73        | 1.51 ± 0.53            | 0.385          | 1.57 (1.33, 2.25)        | 1.59 (1.09, 2)              | 0.442          |
| TC (mmol/L)    | 4.16 (3.74, 4.45)                            | 4.26 (3.04, 4.64)      | 4.37 (4.06, 4.75)       | 3.94 ± 1.11        | 4.57 ± 0.94            | 0.105          | 4.3 (3.14, 4.85)         | 4.28 (3.27, 4.5)            | 0.878          |
| HDL-C (mmol/L) | 1.16 (1.01, 1.32)                            | 1.2 (1.02, 1.35)       | 1.08 (0.96, 1.35)       | 1.14 ± 0.24        | 1.25 ± 0.27            | 0.289          | 1.31 (1.04, 1.43)        | 1.09 (0.98, 1.22)           | 0.219          |
| LDL-C (mmol/L) | 2.12 ± 0.76                                  | 2.52 ± 0.81            | 2.57 ± 0.61             | 2.38 ± 0.66        | 2.78 ± 0.86            | 0.209          | 2.51 ± 0.95              | 2.48 ± 0.6                  | 0.915          |
| Urea (mmol/L)  | 4.92 ± 1.33                                  | 4.63 ± 1.26            | 4.5 ± 1.02              | 4.26 (3.78,        | 4.46 (3.86,            | 1              | 4.67 ± 0.9               | 4.59 ± 1.3                  | 0.851          |

|                            |                      |                        |                        |                    |                         |       |                    |                         |       |
|----------------------------|----------------------|------------------------|------------------------|--------------------|-------------------------|-------|--------------------|-------------------------|-------|
|                            |                      |                        |                        | 5.45)              | 5.23)                   |       |                    |                         |       |
| CREA ( $\mu\text{mol/L}$ ) | 47.15 (44.52, 48.8)  | 55 (44.95, 60.05)      | 61.25 (42.05, 73.2)    | 54.56 $\pm$ 9.99   | 59.29 $\pm$ 24.05       | 0.561 | 53.4 (46.5, 60.5)  | 52.95 (44.15, 66.6)     | 0.959 |
| eGFR (ml/min/L)            | 115 (109, 118.25)    | 113.03 (108.5, 124.71) | 110.03 (99.64, 113.88) | 113.03 (108, 122)  | 110.03 (100.66, 113.38) | 0.089 | 115.33 (113, 122)  | 109.22 (103.75, 114.62) | 0.085 |
| UA ( $\mu\text{mol/L}$ )   | 314.7 (261.1, 348.2) | 302.4 (264.7, 385.85)  | 264.95 (216.6, 350.63) | 306.35 $\pm$ 79.57 | 299.18 $\pm$ 127.68     | 0.872 | 303 (271.8, 386.7) | 300.2 (217.48, 348.9)   | 0.189 |

Data are shown as mean  $\pm$  standard deviation for variables of normal distribution and median with the interquartile range (25-75%) for skewed variables.

HR: heart rate; SBP: systolic blood pressure; DBP: diastolic blood pressure; HGB: hemoglobin; FBG: fasting blood glucose; HbA1c: hemoglobin A1c; TG: triglycerides; TC: total cholesterol; LDL-C: low-density lipoprotein cholesterol; HDL-C: high-density lipoprotein cholesterol; CREA: creatinine; eGFR: estimated glomerular filtration rate; UA: uric acid; IGT: impaired glucose tolerance; DM: diabetes mellitus.

\*:  $P < 0.05$ .

a: Considering only four patients with polyps in the right colon may lead to unreliable statistical results, we statistical description of the site distribution of the polyps subgroup.

Supplementary Table 3. Clinical characteristics and biochemical variables in acromegalic patients of different IGF-1×ULN quartiles.

| IGF-1×ULN quartiles  | Q1 (n = 21)                       | Q2 (n = 21)                       | Q3 (n = 22)                    | Q4 (n = 22)            | P-value         |
|--|-----------------------------------|-----------------------------------|--------------------------------|------------------------|-----------------|
| <b>Age</b> (years)   | 37.38 ± 13.35 <sup>c</sup>        | 45.19 ± 12.02                     | 45 ± 10.18                     | 46.36 ± 9.96           | <b>0.048*</b>   |
| Sex, n (%)   |                                   |                                   |                                |                        | 0.72            |
| Male   | 9 (43)                            | 10 (48)                           | 12 (55)                        | 13 (59)                |                 |
| Female   | 12 (57)                           | 11 (52)                           | 10 (45)                        | 9 (41)                 |                 |
| BMI (Kg/m <sup>2</sup> )   | 25.11 ± 2.92                      | 25.76 ± 3.46                      | 26.37 ± 2.88                   | 27.1 ± 2.78            | 0.174           |
| GHPA volumes (cm <sup>3</sup> )  | 5.19 (0.83, 7.95)                 | 2.33 (1.19, 3.38)                 | 2.73 (1.72, 6.5)               | 1.81 (1.12, 4.33)      | 0.779           |
| <b>Basal GH levels</b> (ug/L)  | 9.12 (4.87, 21.8) <sup>c</sup>    | 17 (10.5, 29.5)                   | 17.15 (8.08, 29.42)            | 27.45 (19.25, 55.95)   | <b>0.018*</b>   |
| <b>GHnadir levels during OGTT</b> (ug/L)                                     | 5.85 (2.83, 12.5) <sup>c</sup>    | 13.8 (11.3, 26.5)                 | 8.59 (5.53, 22.78)             | 27.25 (10.83, 43.38)   | <b>0.023*</b>   |
| <b>Basal IGF-1 levels</b> (ng/mL)  | 501.24 ± 133.91 <sup>a,b,c</sup>  | 653.19 ± 131.4 <sup>d,e</sup>     | 807.36 ± 134.64 <sup>f</sup>   | 1071.59 ± 197.13       | < <b>0.001*</b> |
| <b>IGF-1×ULN</b>   | 1.59 (1.33, 1.8) <sup>a,b,c</sup> | 2.11 (2.03, 2.32) <sup>d,e</sup>  | 2.81 (2.72, 2.88) <sup>f</sup> | 3.85 (3.16, 4.2)       | < <b>0.001*</b> |
| UA (μmol/L)  | 259.4 (220.7, 348.8)              | 259.1 (221.6, 299.5) <sup>e</sup> | 301.2 (238.48, 389.7)          | 332.6 (279.68, 389.88) | <b>0.048*</b>   |
| <b>Patients with polyps</b> , n (%)  | 3 (14) <sup>a,b,c</sup>           | 10 (48) <sup>d,e</sup>            | 10 (45) <sup>f</sup>           | 12 (55)                | <b>0.038*</b>   |
| <b>GHPA Volumes group</b> (cm <sup>3</sup> ), n (%) <sup>a,b,c, d,e, f</sup> |                                   |                                   |                                |                        | <b>0.018*</b>   |
| <1   | 7 (33)                            | 3 (14)                            | 3 (14)                         | 4 (18)                 |                 |
| 1–4  | 2 (10)                            | 13 (62)                           | 11 (50)                        | 11 (50)                |                 |
| ≥ 4  | 12 (57)                           | 5 (24)                            | 8 (36)                         | 7 (32)                 |                 |

Data are shown as mean ± standard deviation for variables of normal distribution, and median with the interquartile range (25-75%) for skewed variables.

BMI: body mass index; GHPA volumes: growth hormone (GH)-secreting pituitary adenoma volumes; GH: growth hormone; GHnadir levels during OGTT: the maximal suppression of GH levels during 180-OGTT; IGF-1: insulin-like growth factor; ULN: upper limit of normal. UA: uric acid;

\*: P<0.05.

a. P<0.05 for Q1 vs. Q2; b. P<0.05 for Q1 vs. Q3; c. P<0.05 for Q1 vs. Q4; d. P<0.05 for Q2 vs. Q3; e. P<0.05 for Q2 vs. Q4; f. P<0.05 for Q3 vs. Q4.

Supplementary Table 4. The correlations between clinical indicators and polyps.

|                             | Age      | Sex    | BMI     | Polyps | Site distribution of polyps | Number of polyps | Size of polyps | GHPA Volume | Basal GH levels | GHnadir levels during OGTT | Basal IGF-1 levels | IGF-1×ULN |
|-----------------------------|----------|--------|---------|--------|-----------------------------|------------------|----------------|-------------|-----------------|----------------------------|--------------------|-----------|
| Age                         |          |        |         |        |                             |                  |                |             |                 |                            |                    |           |
| Sex                         | 0.208    |        |         |        |                             |                  |                |             |                 |                            |                    |           |
| BMI                         | 0.167    | -0.077 |         |        |                             |                  |                |             |                 |                            |                    |           |
| Polyps                      | 0.300*   | 0.043  |         |        |                             |                  |                |             |                 |                            |                    |           |
| Size of polyps              | 0.114    | -0.018 | 0.185   |        |                             |                  |                |             |                 |                            |                    |           |
| Site distribution of polyps | 0.205    | -0.190 | -0.059  |        |                             |                  |                |             |                 |                            |                    |           |
| Numbers of polyps           | 0.326    | -0.037 | 0.416*  |        |                             |                  |                |             |                 |                            |                    |           |
| GHPA Volume                 | -0.180   | -0.037 | 0.024   | 0.174  | -0.151                      | -0.233           | -0.025         |             |                 |                            |                    |           |
| Basal GH levels             | -0.206   | 0.033  | -0.127  | 0.122  | -0.362*                     | -0.131           | -0.251         | 0.349*      |                 |                            |                    |           |
| GHnadir levels during OGTT  | -0.060   | 0.076  | -0.045  | 0.140  | -0.273                      | 0.012            | -0.257         | 0.282*      | 0.783**         |                            |                    |           |
| Basal IGF-1                 | -0.131   | -0.156 | 0.146   | 0.135  | -0.114                      | -0.012           | 0.013          | 0.093       | 0.140           | 0.309*                     |                    |           |
| IGF-1×ULN                   | 0.285*   | -0.042 | 0.216*  | 0.229* | -0.103                      | 0.102            | 0.047          | -0.042      | 0.057           | 0.303*                     | 0.872**            |           |
| TG                          | -0.210   | -0.113 | -0.088  | -0.106 | -0.180                      | -0.186           | -0.133         | 0.096       | 0.373**         | 0.269*                     | -0.042             | -0.060    |
| TC                          | -0.099   | -0.015 | -0.032  | -0.140 | 0.111                       | -0.055           | 0.265          | 0.306*      | 0.182           | 0.101                      | -0.136             | -0.116    |
| HDL-C                       | 0.187    | 0.180  | -0.102  | 0.080  | -0.003                      | -0.188           | 0.199          | 0.164*      | -0.321*         | -0.241*                    | 0.051              | 0.111     |
| LDL-C                       | -0.019   | 0.029  | 0.173   | -0.040 | 0.148                       | -0.019           | 0.249          | 0.311*      | -0.093*         | -0.115                     | -0.055             | -0.060    |
| CREA                        | 0.335**  | -0.069 | 0.097   | 0.004  | -0.105                      | -0.033           | -0.050         | -0.130      | -0.216*         | -0.214*                    | -0.056             | 0.120     |
| eGFR                        | -0.651** | 0.051  | -0.221* | -0.185 | -0.216                      | -0.134           | -0.311         | 0.189       | 0.305*          | 0.197                      | -0.015             | -0.303*   |
| UA                          | -0.204   | -0.435 | 0.067   | 0.041  | -0.122                      | -0.284           | -0.035         | 0.122       | -0.003          | -0.087                     | 0.205              | 0.101     |
| Hypertension                | 0.335*   | 0.170  | 0.248*  | 0.040  | 0.405*                      | 0.317            | 0.062          | -0.240*     | -0.205          | -0.184                     | -0.120             | 0.003     |

|                   |        |       |       |       |        |        |       |        |       |        |         |        |
|-------------------|--------|-------|-------|-------|--------|--------|-------|--------|-------|--------|---------|--------|
| Diabetes mellitus | 0.290* | 0.105 | 0.002 | 0.075 | -0.070 | -0.008 | 0.215 | -0.098 | 0.073 | -0.003 | -0.285* | -0.151 |
|-------------------|--------|-------|-------|-------|--------|--------|-------|--------|-------|--------|---------|--------|

The correlations were determined by the Spearman analysis.

BMI: body mass index; GHPA Volumes: growth hormone (GH)-secreting pituitary adenoma volumes; GH: growth hormone; GHnadir levels during OGTT: the maximal suppression of GH levels during 180-OGTT; IGF-1: insulin-like growth factor-1; ULN: upper limit of normal; TG: triglycerides; TC: total cholesterol; LDL-C: low-density lipoprotein cholesterol; HDL-C: high-density lipoprotein cholesterol; CREA: creatinine; eGFR: estimated glomerular filtration rate; UA: uric acid.

\*: P<0.05.