

## 거대 간을 가지는 상염색체우성 다낭신(ADPKD)에서 ABC 운동이 통증의 감소에 미치는 영향에 대한 연구

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### Effectiveness of ABC Rehabilitation Therapy for Reducing Pain in ADPKD with Significant Polycystic Liver Disease

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**Purpose:** Autosomal dominant polycystic kidney disease (ADPKD) is a systemic disorder that is characterized by renal and extrarenal manifestations. The most common extra-renal manifestation of ADPKD is polycystic liver disease (PLD). As the intra-abdominal mass volume including kidney and liver grows, related symptoms like pain is known to increase. An abdominal bracing core (ABC) exercise is known to be effective at relieving chronic back pain. The purpose of this study is to evaluate whether ABC rehabilitation exercise, a validated and modified abdominal bracing exercise in Korea, is effective in reducing pain in ADPKD patients with significant PLD.

**Method:** We performed open-label, prospective case-control study of ADPKD patients with significant PLD at Seoul National University Hospital from Nov. 2014 to Feb. 2015. Significant PLD was defined as a height-adjusted Total Liver volume (htTLV) over 1,600 mL/m. The case group (n=12) participated in ABC exercises, while the control group (n=11) was only given a consultation about nutrition and exercise and a recommendation of regular exercise. After a 3-month biweekly intervention, changes in pain, abdominal symptoms and quality of life using three questionnaires (ADPKD abdominal symptoms, KODI pain and SF-36) and changes in body composition change using bioimpedance was analyzed.

**Results:** There were 23 subjects (male: 4, female: 19). Their mean age was 53, and mean±SD of htTLV was 2,706±1,335 mL/m. In baseline characteristics, there was no significant difference between case and control groups except for ECW/TBW of Rt. arm and Lt. leg (Rt. arm: p=0.043; Lt. leg: p=0.030). After intervention, the pain scores of the all but two case subjects improved by more than 1 point. Pain (10 scale) was significantly reduced in the case group (difference, mean±S.D [Before-After] -2.78±4.17, p<0.005). Pressure-related symptoms were significantly improved (difference, mean±S.D [Before-After] -4.27±5.43, p<0.005). However, neither GI symptoms nor QoL was significantly different between the two groups. In bioimpedance results, there was no change between before and after the intervention.

**Conclusion:** We showed that ABC exercise is effective for pain relief in ADPKD patients with significant PLD. To our knowledge and up until now, this was the first pilot study to investigate the effectiveness of ABC exercise in ADPKD patients with chronic pain.

**Key Words:** 상염색체우성다낭신, 간비대, 재활 치료  
ADPKD, Hepatomegaly, Rehabilitation therapy