EFFICIENCY OF EARLY REHABILITATION IN PATIENTS WITH RESPIRATORY DISTRESS AFTER TOTAL HIP ARTHROPLASTY

Miroslaw Kulej[1], Szymon L. Dragan[1], Barbara Dragan[2], Katarzyna Plocieniak[1], Dorota Dragan-Sroczynska[1], Iwona Pirogowicz[3], Szymon F. Dragan[1]

[1]Clinical Department of Orthopedic and Traumatologic Surgery, Faculty of Postgraduate Medical Training, ortopedia@aszk.wroc.pl and [2]First Clinic of Anesthesiology and Intensive Therapy, Department of Anesthesiology and Intensive Care, Faculty of Medicine, Wroclaw Medical University, Borowska 213 St., 50-556 Wroclaw, Poland; [3]Deparment of Hygiene, Faculty of Medicine, Wroclaw Medical University, J. Mikulicza-Radeckiego 7 St., 50-368 Wroclaw, Poland

Majority of total hip arthroplasty is performed in older patients with some level of respiratory distress. One of the leading complications after THA is difficulty in patient mobilisation caused by respiratory compromise. On the other hand, one of the key factors influencing treatment and THA outcomes is early mobilisation and efficient respiratory system. The aim of this study was the evaluation of patient mobilization in early postoperative period on respiratory system efficiency. Study included two groups of patients: 50 THA patients with preoperatively diagnosed respiratory distress and 50 THA patients who did not show respiratory compromise on preoperative examination. In both groups lungs vital capacity (VC) was measured 1 day before operation, on the operation day 1 hour before the procedure started, 1 hour after the procedure completed and every 8 hours within first 5 postoperative days regardles of mobilization protocol. In addition, examination of full blood count was performed before the operation, 1 hour after the operation and then every 8 hours during the first 5 postoperative days. Efficiancy of early rehabilitation was evaluated based on O_2 and CO_2 blood levels and blood pH, CO_2 partial pressure (pCO_2), total blood carbon dioxide content (TCO_2), O_2 partial pressure (pO2), O_2 saturation (Sat O2), buffer base (BB) and normal buffer base (NBB). Decline of respiratory efficiency 1 hour before and 1 hour after the procedure was observed in the whole population of 100 patients. Patients with diagnosed respiratory compromise showed 35% decrease of tidal volume (TV) and gasometry proved increased acidosis and hiperkalaemia several hours after operation. Patients who actively complied to early mobilization protocol regained preoperative spirometry and gasometry results within 2 postoperative days, whereas the other patients showed persisting acidosis, cell metabolism disorders and propensity to microembolism as long as the 5th postoperative day.