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Topic: A prospective study on impact of pharmaceutical care in quality of life, cost effectiveness and medication adherence in COPD patients

Introduction: COPD is one of the major health problems worldwide which negatively affect patients, families, employment sector and the society. The management of COPD not only requires the appropriate prescription regimen by physician but also requires intensive education and counselling to the patient regarding their illness. Suboptimal adherence and lack of knowledge are found to be the major reasons for worsened clinical symptoms and economic outcome.

Objectives: To evaluate cost effectiveness of pharmaceutical care provided to the patients in improving medication adherence and quality of life to reduce rate of exacerbations and economic burden.

Methodology: A retrospective, prospective, comparative, observational study was conducted in 91 patients over a period of 6 months. COPD patients of age 30 to 85 who are on inhaler therapy with at least one hospital admission were included in the study. Patient demographics & medication history were collected and cost of illness was calculated retrospectively. Entire study population was categorized into 4 groups based on severity: mild, moderate, severe and very severe. Patient counselling and smoking cessation clinics were conducted. Patient medication adherence and quality of life were assessed using Morisky medication adherence questionnaire and St. George respiratory questionnaire (SGRQ) respectively at baseline and reassessed in follow up visits and compared using appropriate statistical tools. Cost of illness in prospective 6 months were calculated and compared with retrospective six months. Cost effectiveness of intervention was assessed using ICER.

Statistical analysis: Paired t test, Wilcoxon signed rank test and Pearson correlation coefficient were used to analyze the data.

Results: The results indicated significant improvement in medication adherence ($p < 0.001$), quality of life (< 0.01) and a significant reduction of 0.47 hospital treated exacerbation per patient. The average cost per patient before and after intervention were 4563.2 ± 1574 and 1911.16 ± 1535.2 respectively. This reflects a cost saving of 2374.87 Per patient after intervention. Minimum ICER value obtained in mild category (2638.74) and maximum in very severe category (26232.20).

Conclusions: Current study proved that pharmaceutical care is cost effective in making significant reduction in number of hospital treated exacerbations and cost of illness by improving patient medication adherence and quality of life.
Key words: COPD, Pharmaceutical care, medication adherence, HRQOL, COI, Cost effectiveness.