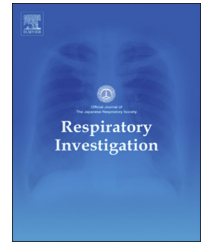




Contents lists available at ScienceDirect

Respiratory Investigation

journal homepage: www.elsevier.com/locate/resinv



Original article

A propensity score-matched comparison of the efficacies of OK-432 and talc slurry for pleurodesis for malignant pleural effusion induced by lung adenocarcinoma



Kango Nohara, M.D., Kazuto Takada, M.D., Ph.D.* , Eiji Kojima, M.D., Ph.D., Kiyoko Ninomiya, M.D., Shoko Miyamatsu, M.D., Takahiro Shimizu, M.D., Tsutomu Sakurai, M.D., Takaaki Mizuno, M.D., Yuuki Yamashita, M.D.

Division of Respiratory Medicine, Komaki City Hospital, 1-20 Johbuji, Komaki 485-8520, Japan

ARTICLE INFO

Article history:

Received 8 December 2015

Received in revised form

5 April 2016

Accepted 27 April 2016

Available online 21 June 2016

Keywords:

Lung cancer

OK-432

Pleural effusion

Pleurodesis

Talc

ABSTRACT

Background: The choice of an optimal sclerosant for pleurodesis for malignant pleural effusion remains controversial. This retrospective clinical study compared the efficacy and safety of two sclerosants; talc slurry (talc-s) and OK-432.

Methods: We compared the characteristics, 30/90-day success rates, and adverse events in patients with lung adenocarcinoma who underwent pleurodesis by using either OK-432 or talc-s. Propensity score matching was used to compare the two sclerosants.

Results: Ninety-four patients (mean age = 71.6 ± 9.6 years) were included in this retrospective study, of whom 64 received OK-432 and 30 received talc-s. Seventy-three patients (77.6%) were initially diagnosed with clinical stage IV lung cancer, with a 28.7% epidermal growth factor receptor mutation frequency. The propensity score-matched cohort included 26 patients from each group. The 30-day success rates for OK-432 and talc-s were 80.7% and 76.9%, respectively (odds ratio: 1.26, 95% confidence interval: 0.33–4.77, $p=0.73$). Neither the overall incidence of adverse events nor the 90-day success rates differed significantly. Multivariate logistic regression revealed that the predictors of 30-day success were lower drainage volume on the previous day, particularly <250 mL/day, the presence of full lung expansion, and pre-therapy with an epidermal growth factor receptor-tyrosine kinase inhibitor. The median post-pleurodesis survival time was 6.9 months, which was not significantly different between the study groups.

Conclusions: Propensity score-matched analyses showed that pleurodesis using OK-432 and talc-s demonstrated comparable efficacy and safety profiles in patients with lung adenocarcinoma. This indicated that OK-432 could be a viable alternative to talc-s in this procedure.

© 2016 The Japanese Respiratory Society. Published by Elsevier B.V. All rights reserved.

*Corresponding author. Tel.: +81 568 76 4131; fax: +81 568 74 4516.

1. Introduction

Malignant pleural effusion (MPE), which is a critical complication resulting from numerous malignant diseases, requires local thoracic treatment, in addition to systemic therapy. The incidence of primary malignancies is as follows: lung cancer 39.5%, breast cancer 16.8%, and malignant lymphoma 11.5% [1]. Adenocarcinoma is the most common type of lung cancer associated with MPE [2]. MPE generally occurs at an advanced stage of the disease, and the median survival time (MST) following MPE diagnosis is around 4–6 months [3]. Particularly in patients with lung cancer, even minimal effusion indicates poor prognosis, as compared to patients without effusion [2]. As MPE develops, symptoms such as cough, chest pain, dyspnoea, or an oppressive chest feeling worsen. The control of MPE is therefore required to ameliorate these symptoms and maintain the patient's quality of life and daily activities. Optimal management of MPE is thus a key aspect of lung cancer treatment.

The management of MPE is usually determined by considering the symptoms, performance status, prognosis, and sensitivity for the treatment of primary disease [1]. Lung adenocarcinoma shows low chemosensitivity, and the management of MPE is usually considered prior to systemic chemotherapy. Although thoracentesis is usually the preferred first course of treatment, MPE can recur within 1 month. Therefore, pleurodesis is recommended, unless the patient has very poor prognosis or has developed a trapped lung [1,3]. The reported success rate of pleurodesis is 65–95% [3]. However, there is no apparent consensus on the optimal method or sclerosant that can be used for this procedure. Numerous sclerosants have been tested clinically and a recent meta-analysis and systematic review indicated that talc poudrage, used under surgical thoracoscopy, produced optimal pleurodesis [4,5]. However, this procedure requires general anesthesia and places a high burden on the patient. In contrast, talc slurry (talc-s) is available at the bedside and is more appropriate for patients with advanced disease.

Prior to the approval of talc-s by the Japanese Ministry of Health, Labor, and Welfare in December 2013, OK-432 had been widely used for pleurodesis, with high efficacy and safety [6–11]. The efficacy of OK-432 for pleurodesis was evaluated in a study involving East Asian patients with lung cancer [6,9–11], breast cancer [8], and pneumothorax [7]. Comparative studies reported a higher success rate by using OK-432 than by using bleomycin, mitomycin-C, or cisplatin/etoposide [9–11]. However, no previous studies have directly compared the sclerosant effects of OK-432 and talc-s. The present study, therefore, aimed to evaluate the efficacy and safety of OK-432 and talc-s for pleurodesis procedures in patients with lung adenocarcinoma.

2. Materials and methods

2.1. Patients

Patients with lung adenocarcinoma, who underwent pleurodesis using OK-432 or talc-s, were retrospectively identified from electronic medical records. OK-432 was used as a sclerosant until December 2013, and all subsequent pleurodesis procedures employed talc-s. Patients treated between January 2009 and November 2013 were, therefore, included in the OK-432 group, and those treated between December 2013 and July 2015 comprised the talc-s group. The diagnosis of lung adenocarcinoma was based on pathological examination. MPE was defined as the presence of carcinoma in the pleural effusion or unilateral exudative effusion, in the absence of any other apparent origin, besides lung cancer. The decision to perform pleurodesis and the timing of the procedure was determined by the attending physician. Patients who had an unknown clinical or radiological course within 30 days of the pleurodesis procedure and those who had other active malignancies were excluded. This study was approved by the institutional review board of Komaki City Hospital (No. 151021, 26 October 2015).

2.2. Patient data collection

The following patient data were collected: age, sex, clinical stage at diagnosis of lung cancer, epidermal growth factor receptor (EGFR) mutation status, performance status at pleurodesis, pre-therapy (surgery, chemotherapy, EGFR tyrosine kinase inhibitor (TKI)), and post-therapy (chemotherapy, EGFR-TKI) within 30 days of pleurodesis. The drainage volume on the day before pleurodesis, status of the full lung expansion was determined using a chest radiograph recorded on either the index day or the previous day, and the results of pleural effusion analyses, within one month of the pleurodesis procedure, were collected.

2.3. Evaluation of treatment outcomes

The primary outcome considered was the 30-day success rate. Success was defined as “no increment of pleural effusion on a chest radiograph”, compared to the index day, and no additional thoracic procedure (thoracentesis or pleurodesis). A chest radiograph of the patients obtained between 27 and 33 days after pleurodesis was available and was evaluated by two pneumologists, independently or by discussion, if the evaluations differed. The patients who died within 30 days after the pleurodesis were excluded from the analyses with respect to the success rate.

As secondary outcomes, we investigated adverse events and the 90-day success rate. Adverse events that occurred within 30-days of pleurodesis were categorized as presence of

Abbreviations: IPC, indwelling pleural catheter; MPE, malignant pleural effusion; Talc-s, talc slurry.

E-mail addresses: kango19841204@outlook.jp (K. Nohara), k-takada@komakihp.gr.jp (K. Takada), e-kojima@komakihp.gr.jp (E. Kojima), nino-kiyo@komakihp.gr.jp (K. Ninomiya), shoko.miyamatsu@gmail.com (S. Miyamatsu), shimi-taka@komakihp.gr.jp (T. Shimizu), tsakura390@gmail.com (T. Sakurai), straight.822@gmail.com (T. Mizuno), a6mb1095@icloud.com (Y. Yamashita).

Download English Version:

<https://daneshyari.com/en/article/3418538>

Download Persian Version:

<https://daneshyari.com/article/3418538>

[Daneshyari.com](https://daneshyari.com)