Pleuropulmonary changes during treatment of Parkinson's disease with a long-acting ergot derivative, cabergoline

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ABSTRACT: A patient with Parkinson's disease, initially treated with bromocriptine and subsequently with cabergoline, developed progressive pleuropulmonary abnormalities during the latter therapy. These lesions even worsened for some weeks after interruption of cabergoline, which may possibly be related to the prolonged action of this drug. Thus cabergoline may cause similar pleuropulmonary abnormalities to bromocriptine.

In 1981, RINNE [1] reported the development of pleuropulmonary changes during bromocriptine treatment of Parkinson's disease. This finding was later confirmed by other authors [2–10]. The normal evolution on stopping bromocriptine is for pleuropulmonary changes to regress. Similar abnormalities have also been found with other derivatives with similar molecular structures, such as methysergide and ergotamine [11].

In this case report, we describe a patient who developed progressive pleuropulmonary abnormalities during treatment initially with bromocriptine and subsequently with cabergoline. The latter drug is a new ergot derivative with a selective, potent and long-lasting dopaminergic agonistic activity [12, 13].

Case report

A 57 year old man, nonsmoker, with no relevant medical history, worked as a carpenter in the manufacturing industry until retirement in 1988. He developed symptoms of Parkinson's disease in 1981. After a temporary treatment with biperiden, he received a therapy with levodopa-benserazide in combination with bromocriptine (mean dose 30 mg·day⁻¹) until 1989.

In October 1989, the therapy was changed to levodopa-benserazide with trihexiphenidyl. In October 1990, the pleuropulmonary abnormalities had progressed slightly (fig. 1), despite the withdrawal of cabergoline and the improvement of the patients' general condition. Computer tomographic (CT) scan showed right pleural thickening, with interstitial pulmonary markings and atelectasis, and also some shadowing in the left lung. (fig. 2).

Keywords: Cabergoline, Pleuropulmonary change, Parkinson's disease.
There are several arguments for the causal relationship between cabergoline intake and these pleuropulmonary abnormalities. Firstly, the radiological pleuropulmonary lesions are similar to those induced by bromocriptine [1–10]. Secondly, we found an increased percentage of lymphocytes in BAL, and granulomatous histopathological features on transbronchial biopsies, which are consistent with a drug induced alveolitis. Finally, other causes for the pleuropulmonary abnormalities were excluded, e.g. tuberculosis, sarcoidosis, connective tissue diseases, other exposures.

Although the type and progression of the pleuropulmonary changes during cabergoline treatment, strongly suggest a causal relationship, this can only be proved by rechallenge. Tornling et al. [7] described two patients with Parkinson’s disease, intermittently treated with bromocriptine, in whom retrospective analyses showed, an aggravation of the pleuropulmonary disorders when bromocriptine was restarted. However, a prospective rechallenge study may be ethically non-acceptable because of the possible irreversible changes.

In the reports on bromocriptine, a resolution or improvement of the clinical and radiographic signs has been described shortly after reduction or withdrawal of the medication. In the present case, the radiographic abnormalities further progressed up to two months after discontinuation of cabergoline. Cabergoline has a more prolonged action than other dopaminergic agonist ergot derivatives (bromocriptine, pergolide, lisuride) [12, 13] which may explain our finding of a progression of the pleuropulmonary changes after withdrawal.

References


