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Rehabilitation of West Nile Fever (WNF) encephalitis in elderly

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Abstract

In the summer of 2000, an outbreak of WNF affected Israel. Thirty-two elderly patients were admitted to Meir Hospital. WNF encephalitis may result in residual functional damage. However, little information is available regarding the rehabilitation of these patients. Five elderly subjects with residual functional damage were referred to geriatric rehabilitation. Patients were treated with the routine program for neurological rehabilitation after stroke, including daily physiotherapy and occupational therapy. All five were over 77 years and independent before admission. The mean FIM score on admission was 71 (S.D. = ±8.5) and increased to 102 (S.D. = ±14) on discharge. MMSE on admission was 60% (S.D. = ±7.5%), and increased to over 90% on discharge in all of the patients. Clock Completion Test was normal in four on admission, and improved to normal in the fifth patient on discharge. WNF encephalitis may present with functional and intellectual impairment in the elderly. Routine geriatric neurological rehabilitation may benefit those with prolonged functional decline.

Keywords: West Nile Fever; Geriatric rehabilitation; Functional assessment

1. Introduction

West Nile Fever (WNF) is a zoonotic disease and since 1937 is known in the eastern hemisphere (Campbell et al., 2002; Peterson and Marfin, 2002). In the last years, changes

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in disease patterns drew increased interest to the disease. These changes included an increase in the frequency and severity of the disease (Chowers et al., 2001; Campbell et al., 2002) and a large percentage of patients suffered from neurological manifestations. Of note, in the Israeli outbreak during 2000, encephalitis was the most common clinical manifestation in patients over 65 years (Berner et al., 2002). Another major change was the introduction of the disease to the western hemisphere in 1999 (Nash et al., 2001). In the current year, 2002, a large outbreak is advancing through the northern American continent, with more than documented 3700 cases (CDC-MMWR, 2002a,b). Much is to be learned about the short and long term outcome of WNF patients. Moreover, a special emphasis is required regarding the rehabilitation needs of the frail adult population afflicted with the disease.

In the summer of 2000, a large outbreak of WNF affected Israel, during which more than 400 cases were hospitalized (Chowers et al., 2001). Meir Medical Center, is located in the center of Israel and was in the epicenter of this outbreak. Of the fifty patients that were hospitalized with WNF, 32 (64%) were 65 years of age and older. Recently, we have described the outcome of this elderly group up to three months after the outbreak of WNF (Berner et al., 2002). Five patients (16%) suffered from prolonged functional damage and were referred to geriatric rehabilitation. The purpose of this study was to demonstrate the benefit of geriatric rehabilitation in the treatment of west Nile encephalitis patients suffering from residual functional damage.

2. Methods

2.1. Subjects

The cohort of 32 WNF patients over 65 years, admitted to Meir Medical Center, was described previously (Berner et al., 2002). Five of these 32 elderly subjects were referred to geriatric rehabilitation. The criteria for geriatric rehabilitation were the following:

1. Independent function before the illness.
2. Neurological disability secondary to the illness.
3. No cure of neurological damage two weeks after recovery from the acute disease.
4. Support from family.
5. Self-motivation.

2.2. Intervention

The patients were treated as in the routine program for geriatric neurological rehabilitation; including daily physical and occupational therapy. The physical therapy consisted of extremity muscle strengthening exercises, and balance exercises. Occupational therapy treatment consisted of exercise on basic ADL and, computer games. The computer games were intended to improve the following capacities: memory, concentration, hand–eye coordination, sequencing screening, decision-making skills, self-confidence, and self-esteem. All patients participated in group therapy concerning home