Short Communication

Liver involvement in adults with measles

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1. Introduction

There is little information about the consequences of liver involvement in measles. In France, we recently faced a national epidemic outbreak in the adult population due to inadequate vaccine coverage since the 1980s. We report the prevalence and severity of liver involvement in a cohort of adult patients with measles who presented to hospital in an industrialized country.

2. Methods

We retrospectively collected the clinical and laboratory characteristics of all adult patients with biologically confirmed measles who had presented to one of four tertiary care hospitals in the western Paris area between January 2010 and May 2011. All cases were confirmed by serology or by PCR on nasopharyngeal aspirations at the national reference center. A case of measles was reported as ‘severe’ when it required admission to an intensive care unit (ICU). ‘Major’ hepatitis was defined as liver enzymes five times the upper limit of normal.

Clinical and biological data were collected from the medical charts and the data analysis was performed using IBM SPSS Statistics for Windows, version 19.0 (IBM Corp., Armonk, NY, USA).

3. Results

Eighty consecutive adult patients with a median age of 30.1 years (interquartile range 23.5–34 years) presented to hospital during the study period. The male to female ratio was 0.77 (35 men and 45 women); the median length of hospital stay was 4.7 days (interquartile range 3–5.5 days). Only two patients were considered as immunosuppressed and one patient was pregnant. Sixteen patients (20%) only presented to the emergency room and had then returned to their homes, while the remaining 64 patients were hospitalized either in a medical unit (74%) or in the ICU (6%).

The main clinical signs leading to consultation were skin rash, fever, and dyspnea (Table 1). These signs appeared an average 6.2 days (range 1–21 days) before hospitalization.

Prior to their admission, patients had received the following treatments: paracetamol (n = 34), non-steroidal anti-inflammatory drugs (n = 19), and corticosteroids (n = 11). Moreover, 43 patients received antibiotic therapy prior to hospital admission and 18 during hospitalization, prescribed for pneumonia in 16 cases.

Upon admission, three patients needed volemic expansion and 17 patients had dyspnea, three of whom required respiratory assistance for respiratory failure. One patient needed both volemic expansion and respiratory assistance.
Liver enzymes were elevated in 65 (81%) patients upon admission. Among these patients, liver enzyme elevation was over five times the upper limit of normal in 18 patients and over 10 times the upper limit of normal in five patients. No clinical or biological liver failure was reported; no cases of measles-related encephalitis were observed, and jaundice was rare (n = 2).

None of the patients with major hepatitis were admitted to the ICU. Likewise, among the five patients admitted to the ICU for respiratory failure, none had major hepatitis. In fact, neither hepatitis nor its severity were statistically linked to a severe presentation (p = 0.534), or to bacterial infection (p = 0.536). The outcome was always favorable.

### 4. Discussion

In the literature, hepatic involvement in measles is observed more frequently in young adults than in children.6 We observed a high frequency of hepatitis, as reported in most studies; the prevalence of hepatitis has been shown to range from 71% to 89%.4–7 A few studies have reported a lower prevalence, including Leibovici et al.4 41%, and Tisher and Abramov.6 52%. Moreover, Gavish et al. found a link with the severe form of measles.10

Clinical jaundice is rare and disturbances in liver function tests usually reach their peak values between days 5 and 10. A complete resolution of liver disturbance is the rule, and the severity of hepatic involvement has occasionally been linked to secondary bacterial infections.10 Severe cases have been reported in the pediatric population. In our experience, we observed no fatalities and no encephalitis, and all patients recovered without sequelae following hospital discharge. In this cohort, the prognosis of measles in adults was excellent overall. Hepatitis was not correlated with severe disease or bacterial infection, as previously suggested.

Our data suggest that hepatitis should be regarded as a common finding rather than a complication of measles infection in adults.4 Physicians should keep measles in mind in the differential diagnosis of an adult patient presenting with hepatitis with fever and rash.

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### References