Combined use of plasmapheresis and antidigoxin antibodies in a patient with severe digoxin intoxication and acute renal failure

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Keywords: digitalis intoxication; renal failure; plasmapheresis

Digitalis intoxication is a common and potentially life-threatening situation [1]. In this condition, the administration of digoxin-specific antibodies (Fab) have proven to be effective in controlling serious complications [2]. However, in patients with severe renal impairment, the clearance of Fab–digoxin complexes is compromised, and this may reduce the utility of Fab therapy in those conditions. Plasmapheresis (PE), by removing the digoxin–Fab complexes, was suggested to prevent the phenomenon of rebound toxicity, which is frequently observed in conditions of renal failure [3], and the combined use of Fab and PE in digitalis intoxication associated with severe renal failure has been reported [4]. However, because in those cases PE was initiated several hours after the administration of Fab, the best therapeutic strategy still remains to be established [5]. We report a case of combined use of Fab closely followed by a single session of PE in a patient with severe digitalis intoxication.

Case

A 79-year-old patient was admitted to the emergency room 48 h after self administration of 30 mg of digoxin. On admission, the patient was comatose and presented a junctional rhythm and haemodynamic instability. Plasma digoxin levels were 16.7 ng/ml and an oliguric acute renal insufficiency supervened. A temporary pacemaker was introduced. The patient received Fab (760 mg) closely followed by PE (plasma exchange of 2.2 l, using albumin as reposition fluid). During the session of PE, the patient gradually recovered consciousness and sinus rhythm. During the following hours there was no clinical deterioration and the pacemaker was removed. Plasma digoxin levels were 13 and 2.4 ng/ml at 10 and 24 h after PE, respectively. The patient was released from hospital by the fifth day, electrically stabilized and with improved renal function.

Because neither digoxin nor Fab can be efficiently removed by haemodialysis or haemofiltration, the presence of renal failure represents an important limitation to the treatment of patients with digitalis intoxication with Fab [3]. Although PE proved to be effective in removing Fab–digoxin complexes, the total digoxin clearance, as observed in our case, is not significantly increased with this technique [5]. In the few cases described so far, PE was begun several hours after Fab administration and frequently a second session was needed. In the present case, Fab administration was closely followed by PE and this was accompanied by a precocious and consistent clinical recovery despite the persistent high digoxin levels. Given the positive clinical recovery of this case, we suggest that the institution of PE closely after Fab administration may be determinant for the most successful treatment of patients with digitalis intoxication and renal failure and we intend to endorse this protocol for the treatment of similar cases in our institution.

Conflict of interest statement. None declared.

References


Received for publication: 22.5.06
Accepted in revised form: 14.7.06