New-onset type II diabetes mellitus, hyperosmolar non-ketotic coma, rhabdomyolysis and acute renal failure in a patient treated with sulpiride

Sulpiride is a selective dopamine D2 antagonist with antipsychotic and antidepressant activity [5]. Sulpiride has been associated with many side effects [5–7]. Only one case of neuroleptic malignant syndrome with myoglobinuric acute renal failure after withdrawal of sulpiride and mepartrilone therapy was described in the literature [2]. However, in this case, new-onset diabetes mellitus and hyperosmolal non-ketotic coma had not been reported. Our patient had no prior diagnosis of diabetes. New-onset diabetes mellitus due to administration of clozapine, olanzapine, risperidone and quetiapine has been reported previously [6]. However, there was no case of new-onset diabetes mellitus being caused by sulpiride intake. The precise mechanism of antipsychotic-associated diabetes is unclear. Rhabdomyolysis is frequently observed in diabetics [4,6]. We considered that dehydration, non-ketotic coma, hyperthermia, hyperosmolality due to severe hypernatraemia and neuroleptic malignant syndrome were the main causes of rhabdomyolysis in our case [1,3,4,7]. We thought that the trigger was sulpiride administration. We excluded the main causes of rhabdomyolysis according to history and laboratory tests. The kidney is the most common site of complication in rhabdomyolysis, and acute renal failure may occur [1]. In our case, acute renal failure also occurred and was improved with adequate therapy. On the 12th day of hospitalization, the insulin therapy was withdrawn and the serum glucose levels persisted in the normal range with diet regulation. The psychiatric symptoms disappeared, so antipsychotic therapy was no longer required. The complications of sulpiride therapy were observed to be temporary in our case.

In conclusion, physicians should be aware of the potential risks of new-onset diabetes mellitus, hyperosmolar non-ketotic coma, rhabdomyolysis and acute renal failure in patients receiving sulpiride treatment.

Conflict of interest statement. None declared.
Sir,

On 28 September 2003, a long blackout occurred in Italy, lasting from about 3 a.m. until the morning; it was the largest blackout in Italy outside of wartime. A few weeks before, a colossal blackout involved the USA and Canada; it was the greatest in history since the diffusion of electricity.

We all know that our small, polluted, violent planet is endangered. Since 11 September 2001, we feel that globalization is bringing more than the opening up of markets; we now fear terrorist attacks [1]. The SARS epidemic and mad cow disease confronted us with new, potentially lethal diseases and with the dangers of forcing nature in order to increase food production [2]. Nevertheless, in daily life we have lost the sense of danger.

In the case of blackouts and other natural catastrophes, one of the crucial problems is the risk of lack of water or of water contamination. The water purification and distribution systems consume a large amount of electricity and water may not be available during, or safe after, a long electric blackout.

Dialysis, the most widespread chronic life-saving therapy worldwide, requires a large quantity of microbiologically pure, controlled water (500 ml/min of treatment; 120 l for a standard 4 h treatment) [3]. This is one of the impediments to the diffusion of dialysis in the Third World, but it may also become an acute problem at particular times even in developed countries.

Three years ago, there was a flood in Turin, northern Italy, a city of about 900,000 inhabitants. The aqueduct water was polluted in some areas and at risk in others. In such a situation, in which there is the risk of massive microbiological or toxic (metals and biological compounds) contamination, the water depuration systems, targeted to the usually low amount of contaminants present in the aqueduct water, do not guarantee that the water is pure enough for dialysis. This is both true in the case of large depuration systems, with reverse osmosis, such as those employed in the large dialysis centres, where a water purity problem could endanger hundreds of patients within a couple of days, and, even more so, in the case of home haemodialysis patients, whose water treatment system consists of a small ‘portable’ osmosis kit and a water softener.

Our dialysis centre was able to overcome the emergency and to support the other dialysis centres in Turin because of its policy of maintaining the haemofiltration (HF) technique (the only one that does not require water) as a ‘rescue treatment’ for patients with poor tolerance of conventional dialysis techniques and for patients with acute renal failure in our hospital, mainly in the intensive care unit (ICU). In recent years, this technique was, on average, employed in 3–5% of hospital dialysis patients, a pool of 65–70 cases, out of a global dialysis population of about 200 patients, 45–55 on peritoneal dialysis, 18–22 on home haemodialysis and the rest in out-of-hospital settings.

Due to the flood, during the week of 16–22 October 2000, the dialysis centre of our hospital shifted the bicarbonate and haemodiafiltration dialysis treatments scheduled for 84 outpatients to HF (208 HF sessions performed). Another 45 sessions were performed on hospitalized patients. Home haemodialysis patients of the area were treated in hospital until the end of the flood and returned home after microbiological and metal control of the water.

Our experience during the flood taught us that HF should be considered not only a ‘clinical rescue’ treatment, able to improve dialysis tolerance in a very small percentage of our most fragile patients, but also a ‘logistical rescue’ treatment. Therefore, our centre chose not to switch to online HF, so as to maintain in clinical use, without rapidly losing the practical know-how, at least one water-independent extracorporeal dialysis technique.

A further example of the use of this ‘logistical rescue’ occurred during the recent eruption of the Mount Etna volcano. A daily home haemodialysis patient, depending on our centre, who was living in the affected area, was ready to switch to HF in case of water purity problems.

During the Saturday night of the recent blackout, the availability of HF allowed us to safely treat a patient needing dialysis before vascular surgery and to perform the slow HF treatments scheduled (12 h) for three patients in ICUs.

While our habitat steadily approaches the catastrophic panoramas of science-fiction movies, we should also reconsider natural and man-made catastrophes, almost forgotten by the last two generations of Europeans [1,2]. No field of medicine is immune to this need; in ours, the wise use of HF (a technique often considered too slow, too costly and too complex), at least at a level maintaining practical knowledge of its management, may be life-saving in times of emergency [4]. Only history will tell if this becomes a new indication for HF.

Conflict of interest statement. None declared.

Chair of Nephrology
University of Turin
Italy
Email: gbpiccoli@hotmail.com
Giuseppe Piccoli
Alfonso Pacitti
Giovanni Mangiarotti
Alberto Jeantet
Elisabetta Mezza
Giuseppe Paolo Segoloni
Giorgina Barbara Piccoli