Correspondence

Paclitaxel-Induced Myocardial Infarction in a Case of Carcinoma Ovary

Sir,

Paclitaxel is an anticancer agent used for the treatment of breast and ovarian cancer. The major side-effects are bone marrow suppression, alopecia, polyneuropathy and cardiac toxicities. The cardiac toxicities range from asymptomatic bradycardia, atrioventricular conduction blocks, atrial arrhythmias, left bundle branch block, ventricular tachycardia, congestive cardiac failure and fatal myocardial infarction. Myocardial infarction is a serious and life-threatening adverse effect.

A 48 year old female, case of carcinoma (Ca) ovary (poorly differentiated serous carcinoma); who had undergone total abdominal hysterectomy and salpingoopherectomy 2 years ago; was presently being treated with chemotherapy in the oncology unit for the last 5 months as she had developed peritoneal and liver metastasis. She was receiving injection Paclitaxel 240 mg intravenously (IV) and injection Cisplatin 100 mg IV for the last 4 cycles and had tolerated them well. On the day of 5th cycle of chemotherapy after receiving injection Paclitaxel, she developed a sudden circulatory collapse. She was found to be pulseless and her blood pressure was not recordable; had cold clammy extremities and became unconscious and was referred to the emergency medical unit for further management. Cisplatin was not given during this cycle in view of above events.

On arrival in medical ward, patient was in cardiac arrest and had to be given cardiopulmonary resuscitation (CPR) for 10 minutes. She was given IV adrenaline and atropine; cardiac massage and revived. Post resuscitation, a low volume pulse was palpable and there was sinus tachycardia with a blood pressure of 80 mm Hg.

An ECG done post CPR after 2 hours revealed sinus tachycardia, Q wave in avL and 1 mm ST segment elevation in lead V2 (Fig.1). The patient did not complain of chest pain, palpitations or breathlessness. A central line was inserted for central venous pressure monitoring which was 0-1 cm and the patient was treated with IV fluids. In view of the persistent tachycardia on day 2 an ECG was repeated which showed ST elevation in lead I, avL,V2-V4 and reciprocal changes in lead II, III and avF. Serial ECGs were monitored as shown in the figure 2 and 3. Complete blood count, liver function tests and renal function tests were normal. Serum potassium was 4 mEq/L, Troponin T was negative and CPK-MB was marginally elevated 28 U/l. Total CPK was not done. 2 D Echocardiography showed anterior wall hypokinesia with depressed left ventricular systolic function with an ejection fraction of 35 per cent. Hence, a diagnosis of myocardial infarction induced by Paclitaxel was made and Cardiology opinion was sought. The cardiologist agreed with our diagnosis. But in view of other comorbid conditions thrombolysis was deferred. She was treated with IV heparin, oral aspirin, clopidogrel, atorvastatin, metoprolol and enalapril and discharged after a week.

Evidence linking Paclitaxel to cardiotoxicity arose from early Phase I trials in which continuous cardiac monitoring was performed because of the high incidence of major hypersensitivity reactions. The mechanism by which paclitaxel causes cardiac abnormalities, especially myocardial damage, is not well understood. It is postulated that paclitaxel may cause coronary vasospasm and myocardial infarction. The patient did not have any other obvious risk factors attributable to have caused myocardial ischaemia.

There are cases reported in literature where acute myocardial infarction occurred in patients receiving Cisplatin. However, this patient had not received Cisplatin during this cycle. Hence, paclitaxel is postulated to have caused myocardial infarction in this case and this case is being reported.

The potential for cardiotoxicity should be recognized in high risk patients before chemotherapy is initiated. Treatment of most cardiac events induced by chemotherapy is symptomatic. Prompt measures such as discontinuation or modification of chemotherapy should be considered in serious life threatening conditions.

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References


Fig. 1: Biopsy from fistula site showing granulomatous lesion. Fig. 2: Biopsy from fistula site showing acid fast bacilli