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Case Report

# Disseminated Intravascular Coagulation With Excessive Fibrinolysis (DIC-XFL) A Rare Association of Metastatic Prostate Adenocarcinoma: A Case Report

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## ABSTRACT

We present disseminated intravascular coagulation (DIC) with excessive fibrinolysis (XFL) as an unusual presenting manifestation of metastatic prostate cancer (PC), which was successfully treated with chemotherapy with Docetaxel which not only controlled the disease but also reversed the patient's coagulopathy within seven days effectively. Thus highlighting rare and life-threatening haemorrhagic complications of prostate cancer along with its satisfactory management option.

**Keywords:** Adenocarcinoma, Disseminated intravascular coagulation, Excessive fibrinolysis, Prostate cancer.

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## INTRODUCTION

Disseminated intravascular coagulation (DIC) associated with metastatic prostatic carcinoma has an incidence rate of 13-30%. Clinical signs and symptoms of DIC were seen in only 0.4-1.65% of those patients.[1] DIC with excessive fibrinolysis (XFL) in patients with prostate cancer is an uncommon yet life-threatening complication presenting with systemic bleeding, deranged coagulation profile and low fibrinogen levels.[2] We present disseminated intravascular coagulation (DIC) with excessive fibrinolysis (XFL) as an unusual presenting manifestation of metastatic prostate cancer.

## CASE REPORT

A 56–year–older adult presented with bleeding from gums, haematuria and body aches. Examination revealed ecchymosis on the forearms and abdominal wall. Laboratory evaluation showed haemoglobin 9.4 g/dl, INR 3.0, PT 20 seconds prolonged, and APTT 24 seconds prolonged above the control. CT Scan of the pelvis revealed an enhancing nodule in the prostate. Serum PSA level was 77ng/ml. A prostatic biopsy could not be done due to coagulopathy. Radionuclide Bone scan showed widespread osseous metastases. The patient was started on ADT with Leuprolide and discharged. He continued to have gum bleed. After one month, he visited another hospital for persistent gum bleed and an episode of haematuria. There, he underwent a TRUS-guided biopsy, which showed an Adenocarcinoma prostate, with a Gleason score of 6/10. The procedure was complicated by massive per rectal bleeding, and a drop in haemoglobin from 9g/dl to 6.0g/dl was seen, along with prolonged PT and APTT. He remained in intensive care and received multiple transfusions. After hemodynamic stabilisation, he was given a second dose of Leuprolide and discharged. After two weeks, the patient arrived at our institution with torrential lower GI bleed, haematuria, bone aches and fatigue. He had ecchymotic patches in his upper limbs. Laboratory investigations revealed haemoglobin 6.6g/dl, INR >10, APTT 80 seconds prolonged, raised D-dimers, FDPs, and low fibrinogen levels. Serum PSA was 100ng/ml. These parameters indicated a diagnosis of metastatic prostate cancer associated with DIC-XFL according to the criteria defined, except that alpha2 antiplasmin (AAP) could not be done. Blood products were transfused, and the patient was started on chemotherapy with Docetaxel. Seventy-two hours after the Docetaxel dose, the coagulation profile returned to normal. Symptoms improved with no further bleeding episodes. On the sixth post-admission day, the patient was discharged from the hospital when haemoglobin improved to 10.4g/dl and normal PT, APTT, and D dimmers for more than 48 hours.

## DISCUSSION

Prostate cancer is the most common male cancer worldwide. Uncommonly, prostate cancer may be associated with various coagulopathies.[3] Among these, DIC is the most common haematological abnormality observed. This association is not clearly understood; however, it is hypothesised that the

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procoagulant molecules expressed by the tumour might be the triggering factor for haematological complications. If the underlying fibrinolysis remains compensated, patients tend to develop thrombotic complications. Uncompensated fibrinolysis results in DIC-XFL, defined as hypofibrinogenemia, coagulopathy, decreased AAP, thrombocytopenia, and haemorrhagic and/or thrombotic complication.[4] This is a rare association of prostate cancer, and therefore, very little is known about this condition. Searching the literature revealed only one large case series by Hyman and colleagues where the authors described 42 prostate cancer patients with DIC-XFL. They highlighted that most patients had metastatic castration-resistant disease on presentation. Ninety percent (90%) of patients had received 2nd line of therapy, and 50% had been given chemotherapy containing Taxanes. Bleeding complications occurred in 79% of patients. This aggressive behaviour of the disease resulted in a median survival of only four weeks. Of 18% of patients had reversal of DIC-XFL, which were all treated with chemotherapy in addition to blood products.[5]

Due to the rarity of this complication and the lack of a standard approach to deal with it, many different modifications of ADT have been tried.[3-7] Chemotherapy is reserved for patients having castrate-resistant disease, and resolution of DIC has been reported with the use of various cytotoxic combinations.[8] Some recent trials tried combining ADT with docetaxel.[9] However, their effectiveness in patients with prostate cancer with XFL specifically remains to be established. A recent approach is to use Degarelix, which is approved for use in metastatic prostate cancer.[10]

In our patient, the disease and its complications were not being controlled with androgen blockade. One limitation was that we could not perform AAP levels. Considering his unresponsiveness to ADT, we treated him successfully with Docetaxel and prednisolone. He responded very well with settling symptoms, falling PSA level and normalisation of coagulation parameters. Presently, he is post cycle six Docetaxel and responding.

Prostate cancer with XFL is a life-threatening haemorrhagic form of DIC associated with metastatic, castration-resistant prostate cancer and carries a poor prognosis. Prompt recognition of fibrinolysis and early treatment can be lifesaving.

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