abiraterone acetate; about 100 mg eq. niraparib and about 250 mg abiraterone acetate; about 33 mg eq. niraparib and about 333 mg abiraterone acetate; or about 67 mg eq. niraparib and about 333 mg abiraterone acetate. In an example, the FrDC or FDC are oral dosage forms. In an example, the oral dosage form is a tablet, a capsule, or a sachet.

In the methods of treatment disclosed herein, the fixed-dose combination (FDC) comprising abiraterone acetate and niraparib, preferably niraparib tosylate monohydrate, is as defined throughout the present disclosure.

The present disclosure relates to a pharmaceutical formulation comprising abiraterone acetate and niraparib tosylate monohydrate, as a combined preparation for simultaneous, separate or sequential use with prednisone, in treating prostate cancer in a patient, such as mCRPC, such as first-line (L1) mCRPC. In as example, the patient has not been treated with abiraterone acetate and prednisone for more than 5 months. In an example, the patient is positive for homologous recombination deficiency (HRD), or the patient is not positive for HRD. In an example, the HRD status is detected by monoallelic or biallelic alterations in one or more DNA repair genes, including without being limited to, BRCA1 (Breast Cancer gene 1), BRCA2 (Breast Cancer gene 2), ATM (ataxia-telangiectasia mutated), FANCA (Fanconi Anemia Complementation Group A gene), PALB2 (Partner and Localizer of BRCA2 gene), CHEK2 (Checkpoint Kinase 2 gene), BRIP1 (BRCA1 Interacting Protein C-terminal Helicase 1 gene), HDAC2 (Histone deacetylase 2), or CDK12 (Cyclin Dependent Kinase 12). In an example, the patient has received gonadotropin releasing hormone agonists (GnRHa) therapy or has undergone bilateral orchiectomy, prior to the treatment with the pharmaceutical formulation plus prednisone. In an example, the GnRHa therapy continues during the treatment with the pharmaceutical formulation plus prednisone, if not surgically castrated.

The present disclosure relates to a pharmaceutical formulation comprising abiraterone acetate and niraparib tosylate monohydrate, as a combined preparation for simultaneous, separate or sequential use with prednisone, in treating mCSPC in patients having deleterious germline or somatic homologous recombination repair (HRR) gene-mutated mCSPC. In one aspect, the present disclosure relates to use of a fixed-dose combination (FDC) oral dosage form comprising abiraterone acetate and niraparib, and a pharmaceutically acceptable carrier comprising a wetting agent, wherein the wetting agent is sodium lauryl sulfate (SLS) present in the dosage form in a percentage from about 3 to 6% (w/w), in the manufacture of a combined preparation for simultaneous, separate or sequential use with prednisone, in treating mCSPC, optionally wherein the mCSPC is deleterious germline or somatic homologous recombination repair (HRR) gene-mutated mCSPC, in a male human patient. In an example, the deleterious germline or somatic HRR gene mutation is in one or more genes, including without being limited to, BRCA1, BRCA2, BRIP1, CDK12, CHEK2, FANCA, PALB2, RAD51B, and RAD54L. In an example, the patient has undergone ADT

prior to the treatment with the pharmaceutical formulation plus prednisone. In an example, said ADT is medical or surgical castration. In an example, said ADT started within 6 months, preferably at least 14 days, prior to the treatment with the pharmaceutical formulation plus prednisone. In an example, the patient undergoes ADT during the treatment with the pharmaceutical formulation plus prednisone. In an example, the patient has not undergone prior therapy with a next generation androgen signaling inhibitor therapy (e.g., abiraterone acetate, enzalutamide, apalutamide, darolutamide, nilutamide, flutamide, bicalutamide, and the like). In an example, the patient has received

CLAIMS

1. Use of a fixed-dose combination (FDC) oral dosage form comprising abiraterone acetate and niraparib, and a pharmaceutically acceptable carrier comprising a wetting agent, wherein the wetting agent is sodium lauryl sulfate (SLS) present in the dosage form in a percentage from about 3 to 6% (w/w), `in the manufacture of a combined preparation for simultaneous, separate or sequential use with prednisone, in treating mCSPC, optionally wherein the mCSPC is deleterious germline or somatic homologous recombination repair (HRR) gene-mutated mCSPC, in a male human patient.
2. The use of claim 1, wherein the deleterious germline or somatic HRR gene mutation is in one or more genes, including without being limited to, BRCA1, BRCA2, BRIP1, CDK12, CHEK2, FANCA, PALB2, RAD51B, and RAD54L.
3. The use of claim 1 or 2, wherein the patient had undergone ADT prior to the treatment with the pharmaceutical formulation plus prednisone; optionally wherein said ADT is medical or surgical castration.
4. The use of claim 3, wherein said ADT started within 6 months, preferably at least 14 days, prior to the treatment with the pharmaceutical formulation plus prednisone.
5. The use of claim 3 or 4, wherein the patient is to undergo ADT during the treatment with the pharmaceutical formulation plus prednisone.
6. The use of claim 1 or 2, wherein the patient had not undergone prior therapy with a next generation androgen signaling inhibitor therapy, said next generation androgen signaling inhibitor therapy optionally selected from abiraterone acetate, enzalutamide, apalutamide, darolutamide, nilutamide, flutamide, bicalutamide, and the like.
7. The use of claim 1 or 2, wherein the patient had received docetaxel or cabazitaxel prior to the treatment with the pharmaceutical formulation plus prednisone.
8. The use of claim 1 or 2, wherein the patient had received radiation or surgical intervention, prior to the treatment with the pharmaceutical formulation plus prednisone.
9. The use of claim 1 or 2, wherein the patient had received abiraterone acetate plus prednisone, prior to the treatment with the pharmaceutical formulation plus prednisone.
10. The use of claim 1 or 2, wherein the patient had received abiraterone acetate plus prednisone, during a month prior to the treatment with the pharmaceutical formulation plus prednisone.
11. The use of claim 1 or 2, wherein the patient had received treatments for localized prostate cancer, prior to the treatment with the pharmaceutical formulation plus prednisone.
12. The use of claim 11, wherein said treatments for localized prostate cancer have been completed at least 1 year prior to the treatment with the pharmaceutical formulation plus prednisone.

13. The use of claim 11 or 12, wherein said treatments for localized prostate cancer are up to 3 years of ADT including radiation therapy, prostatectomy, lymph node dissection, or systemic therapies.
14. The use of any one of claims 1-13, wherein said FDC comprises abiraterone acetate and niraparib tosylate monohydrate.
15. The use of claim 13 or claim 14, wherein the FDC comprises about 50 mg eq. niraparib and about 500 mg abiraterone acetate; about 100 mg eq. niraparib and about 500 mg abiraterone acetate; about 50 mg eq. niraparib and about 375 mg abiraterone acetate; about 100 mg eq. niraparib and about 375 mg abiraterone acetate; about 50 mg eq. niraparib and about 250 mg abiraterone acetate; about 100 mg eq. niraparib and about 250 mg abiraterone acetate; about 33 mg eq. niraparib and about 333 mg abiraterone acetate; or about 67 mg eq. niraparib and about 333 mg abiraterone acetate.
16. The use of any one of claims 14-15, wherein the FDC is an oral dosage form.
17. The use of claim 16, wherein the oral dosage form is a tablet, a capsule, or a sachet.
18. The use of any one of claims 1-13, wherein said FDC as defined in any one of Tables 1-12.