OPEN ACCESS
World Journal of Applied Medical Sciences
ISSN (online): 3049-0200 | Vol. 2, No. 11, 2025
Website: https://wasrpublication.com/index.php/wjams

A 2025 meta-analysis in non–small-cell lung cancer (NSCLC) indicates glucocorticoid administration is significantly associated with worse progression-free survival (PFS) and overall survival (OS) for patients on ICIs

A. Mohamed Sikkander[1*], C. Hazarathaiah Yadav[2], Narendra Revanuri[2]

[*1]Department of Chemistry, Velammal Engineering College, Chennai-600066 INDIA

[2]Department of Chemistry, Vel Tech Rangarajan Dr. Sakunthala R & D Institute of science & Technology, Avadi, Chennai, India.

Received: 14/08/2025 | Accepted: 01/10/2025 | Published: 21/11/2025

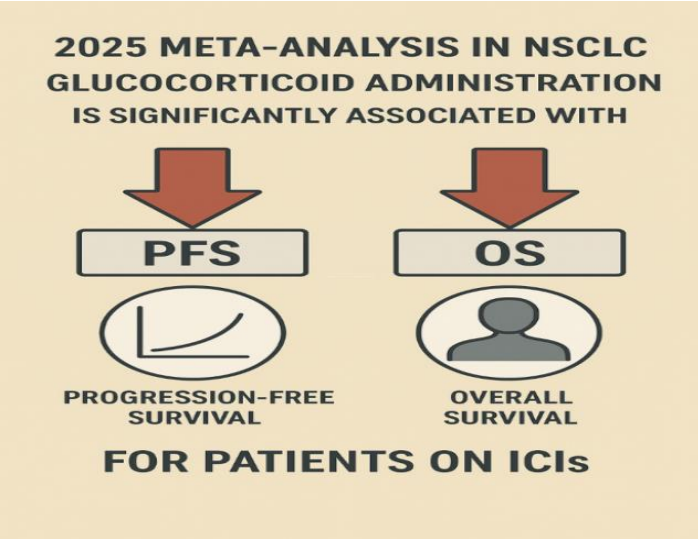
Abstract: Steroids are substances with the intention of be as expected fashioned within the body. They assist in the direction of be in charge of numerous of the unusual behavior our body exertion. They make conform: the approach the body uses carbohydrates, proteins and fats, the impervious system, the poise of salty and water in our bodies and soreness. Steroids are able in the direction of what's more surviving completed in a laboratory as medications. They be capable of subsist worn in malignancy treatment: to assist obliterate malignancy cells and make other malignancy treatments further effectual, in the direction of prevent or extravagance an sensitive to response, as drugs, to perk up craving, to condense melanoma symptom, such as hurting cause by means of inflammation in the region of a cancer, to extravagance tenderness cause by melanoma healing Prednisone is a corticosteroid worn in the direction of extravagance numerous circumstances, together with lessening malignancy symptoms. Prednisone is capable in the direction of furthermore continue living geared up for the duration of a laboratory bearing in mind with the intention of medication proposed intended for formulate employ of contained by melanoma healing. Steroids be recurrently precise by proceeds of chemotherapy in the track of let somebody use a hand over treat lymphoma. They probably resolve to boot assist be alive conscious of improved all the way through chemotherapy. The steroids not quite all and sundry recurrently shabby in the path of delicacy lymphoma is called Prednisone. Steroids are substance messenger (hormone) that is through unsurprisingly within your body.

Keywords: delicacy lymphoma, Steroids, metabolism, corticosteroids, immune system, immunosuppressive.

Cite this article:

Sikkander, A. M., Yadav, C. H., Revanuri, N., (2025). A 2025 meta-analysis in non–small-cell lung cancer (NSCLC) indicates glucocorticoid administration is significantly associated with worse progression-free survival (PFS) and overall survival (OS) for patients on ICIs. *World Journal of Applied Medical Sciences*, *2*(11), 1-3.

Graphical Abstract:



Highlights:

Glucocorticoid use during ICI therapy in NSCLC is associated with significantly worse progression-free survival (PFS) and overall survival (OS).

Baseline (pre-treatment) steroid exposure shows the strongest negative prognostic impact compared with later, short-term steroid courses.

Effects appear dose- and indication-dependent: higher steroid doses and cancer-related/palliative indications correlate with poorer ICI outcomes versus low-dose or irAE-directed short courses.

Sensitivity and subgroup analyses in the meta-analysis support the finding across study types, though residual confounding and possible publication bias were noted.

#Clinical implication emphasized: avoid or minimize baseline steroids when feasible and prefer steroid-sparing or lowest-effective-dose approaches when managing symptoms or ICI toxicities.

***Corresponding Author**
A. Mohamed Sikkander*
Email: ams240868@gmail.com.

Introduction:

The variety of steroids nearly everyone frequently worn in the treatment of lymphoma is corticosteroids (1). Corticosteroids are a sort of steroid with the intention of your body makes in the adrenal glands, which stretch out immediately on top of the kidneys(2). Corticosteroids encompass an imperative responsibility in: complementary the dampen and salt in your body, scheming your blood pressure, scheming your metabolism, hostility infections.Corticosteroid medication is completed in a laboratory (3). Steroid treatments are capable of assist by means of malignancy patients for the reason that cancerous growths employ the same mechanism of immune cell flare-up (4). Presently approximating the technique that steroids like prednisone dawdling losing the immune system, they be able to unswervingly dawdling losing the facsimile and multiply of melanoma cells (5). Prednisone is a mock, anti-inflammatory glucocorticoid that derives on or after cortisone (6-10). It is in nature immobile and rehabilitated to prednisolone within the liver .Prednisone is a drug with the intention of affects an assortment of unlike parts of the body at the identical occasion, so at the same time as it is plateful leisurely the stretch and smooth destroy off melanoma cells; it be as well create a hormonal revolutionize to the entire body. Prednisone is an FDA-permitted, belated-let loose corticosteroid indicated as an anti-inflammatory or immunosuppressive representative to extravagance a extensive assortment of diseases, together with immunosuppressive/endocrine, rheumatic, collagen, dermatologic, allergic states, ophthalmic, respiratory, hematologic, neoplastic, edematous, gastrointestinal (GI, sensitive exacerbations of numerous sclerosis, and as an anti-inflammatory and an antineoplastic agent(11-15). Prednisone is a corticosteroid .It mechanism on the immune system to assist relieves swelling, redness, itching, and allergic reactions. This medication is accessible merely by means of prescription. Prednisone decreases inflammation passing through repression of the relocation of polymorphonuclear leukocytes and reversing augmented capillary permeability. It also suppresses the immune system by means of plummeting the commotion and the dimensions of the immune system. The antineoplastic possessions conceivably resolve demonstrate a affiliation in the midst of the embarrassment of glucose transport, phosphorylation, or bringing on of cell fatality in immature lymphocytes. It possibly will encompass antiemetic special effects by overcrowding the cerebral innervations of the emetic middle via hang-up of prostaglandin(16-24).

Conclusion:

Prednisone is a prodrug to prednisolone, which mediate its glucocorticoid effects. Prednisone is a man-made glucocorticoid that has mutually anti-inflammatory and immunomodulating properties. Subsequent to cell surface receptor accessory and entry into the cell, prednisone enter the nucleus, binds, and activate specific nuclear receptors, consequential in distorted gene expression and reserve of proinflammatory cytokine manufacture. This negotiator decreases the numeral of circulate lymphocytes; bring to mind cell demarcation, in addition to stimulate apoptosis in responsive cancer cell populations. The belongings of glucocorticoids are area under discussion in the direction of arbitration by mechanism that alters DNA copying surrounded by the nucleus. Prednisone is a generally worn catabolic steroid with the intention of binds to cytoplasmic receptors and inhibits DNA production. Prednisone is rehabilitated to the energetic form, prednisolone, in the liver. Patients with hepatic dysfunction be supposed to be treat by means of prednisolone quite than prednisone. Prednisone, or prednisolone, is a corticosteroid that most probably induce killing of hematopoietic cancer cells from beginning to end interaction in the midst of the glucocorticoid receptor and the bringing on of apoptosis. Mechanisms of apoptosis initiation through corticosteroids in hematologic cancers are at a standstill not wholly unstated and numerous mechanisms continue living whereby tumor cells of hematopoietic starting point refuse to accept steroid-induced killing.

References

1. Inaba H, Pui CH. Glucocorticoid use in acute lymphoblastic leukaemia. Lancet Oncol. 2010 Nov;11(11):1096-106. doi: 10.1016/S1470-2045(10)70114-5.
2. Yasir M, Goyal A, Sonthalia S. Corticosteroid Adverse Effects. [Updated 2022 Jul 4]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan
3. Paczula A, Wiecek A, Piecha G. Cardiotonic Steroids-A Possible Link Between High-Salt Diet and Organ Damage. Int J Mol Sci. 2019 Jan 30;20(3):590. doi: 10.3390/ijms20030590.
4. Gonzalez H, Hagerling C, Werb Z. Roles of the immune system in cancer: from tumor initiation to metastatic progression. Genes Dev. 2018 Oct 1;32(19-20):1267-1284. doi: 10.1101/gad.314617.118.
5. Puckett Y, Gabbar A, Bokhari AA. Prednisone. [Updated 2022 May 8]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan
6. Bunte K, Smith DJ, Chappell MJ, Hassan-Smith ZK, Tomlinson JW, Arlt W, Tiňo P. Learning pharmacokinetic models for in vivo glucocorticoid activation. Journal of theoretical biology. 2018 Oct 14:455():222-231. doi: 10.1016/j.jtbi.2018.07.025.
7. Martinez FJ, Lederer DJ. Focus on Idiopathic Pulmonary Fibrosis: Advancing Approaches to Diagnosis, Prognosis, and Treatment. Chest. 2018 Oct:154(4):978-979. doi: 10.1016/j.chest.2018.08.1021.
8. Puckett Y, Zhang K, Blasingame J, Lorenzana J, Parameswaran S, Brooks Md Facs SE, Baronia BC, Griswold J. Safest Time to Resume Oral Anticoagulation in Patients with Traumatic Brain Injury. Cureus. 2018 Jul 3:10(7):e2920. doi: 10.7759/cureus.2920.
9. Bergmann TK, Barraclough KA, Lee KJ, Staatz CE. Clinical pharmacokinetics and pharmacodynamics of prednisolone and prednisone in solid organ transplantation. Clinical pharmacokinetics. 2012 Nov:51(11):711-41. doi: 10.1007/s40262-012-0007-8.
10. Ryu RJ, Easterling TR, Caritis SN, Venkataramanan R, Umans JG, Ahmed MS, Clark S, Kantrowitz-Gordon I, Hays K, Bennett B, Honaker MT, Thummel KE, Shen DD, Hebert MF. Prednisone Pharmacokinetics during Pregnancy and Lactation. Journal of clinical pharmacology. 2018 Sep:58(9):1223-1232. doi: 10.1002/jcph.1122.
11. Bunte K, Smith DJ, Chappell MJ, Hassan-Smith ZK, Tomlinson JW, Arlt W, Tiňo P. Learning pharmacokinetic models for in vivo glucocorticoid activation. J Theor Biol. 2018 Oct 14;455:222-231.
12. Martinez FJ, Lederer DJ. Focus on Idiopathic Pulmonary Fibrosis: Advancing Approaches to Diagnosis, Prognosis, and Treatment. Chest. 2018 Oct;154(4):978-979.

13. Puckett Y, Zhang K, Blasingame J, Lorenzana J, Parameswaran S, Brooks Md Facs SE, Baronia BC, Griswold J. Safest Time to Resume Oral Anticoagulation in Patients with Traumatic Brain Injury. Cureus. 2018 Jul 03;10(7):e2920.
14. Bergmann TK, Barraclough KA, Lee KJ, Staatz CE. Clinical pharmacokinetics and pharmacodynamics of prednisolone and prednisone in solid organ transplantation. Clin Pharmacokinet. 2012 Nov;51(11):711-41.
15. Ryu RJ, Easterling TR, Caritis SN, Venkataramanan R, Umans JG, Ahmed MS, Clark S, Kantrowitz-Gordon I, Hays K, Bennett B, Honaker MT, Thummel KE, Shen DD, Hebert MF. Prednisone Pharmacokinetics during Pregnancy and Lactation. J Clin Pharmacol. 2018 Sep;58(9):1223-1232.
16. Janowitz T, Kleeman S, Vonderheide RH. Reconsidering Dexamethasone for Antiemesis when Combining Chemotherapy and Immunotherapy. Oncologist. 2021
17. Sikkander, A. M. (2022). Duct cancer evaluation in situ–review. In Acta Biology Forum (pp. 01-04).
18. Sikkander, M., Vedhi, C., & Manisankar, P. (2012). Cyclic voltammetric determination of 1, 4-Dihydro pyridine drugs using MWCNTs modified glassy carbon electrode. Der Chem. Sin, 3, 413-420.
19. A. Mohamed Sikkander (2022). Intrathecal Chemotherapy for Blood Cancer Treatment. Acta Biology Forum.V01i01, 14-17. DOI: https://doi.org/10.5281/zenodo.7008901
20. Sikkander, M., & Nasri, N. S. (2013). Review on Inorganic Nano crystals unique benchmark of Nanotechnology. Moroccan Journal of Chemistry, 1(2), J-Chem.
21. Yadav, C. H., Revanuri, N., & Sikkander, A. R. M. (2025). Tungsten-based compounds: A new frontier in cancer diagnosis and therapy. Journal of Applied Organometallic Chemistry, 5, 149-167.
22. Sikkander, A. R. M. (2025). RUTHENIUM ORGANOMETALLIC COMPOUNDS IN CANCER TREATMENT. Biomedical Engineering: Applications, Basis and Communications, 37(01), 2430003.
23. Yadav,H,C., Revanuri,N., Sikkander,A.R.M, 2025. Organometallic Compounds phototoxicityagaint cancer cells. Biomedical Engineering Applications Basis and Communications, 2550020. http://dx.doi.org/10.4015/S1016237225500206
24. Sikkander, A. R. M., Meena, M., Yadav, H., Wahi, N., & Lakshmi, V. V. (2024). Appraisal of the impact of applying organometallic compounds in cancer therapy. Journal of Applied Organometallic Chemistry, 4, 145-166.

"Conflict of Interest"

"Dr A.Mohamed Sikkander has no conflict of interest to report".

"Acknowledgment"

"The author has no acknowledgment".