Title:
Impact of steroids on cancer immunotherapy

Full Name:
Darshan Kanani

Name of the Institution:
Goa Medical College, Goa

State:
Goa

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
1) Omit/decrease steroids in initial 2-3 cycles of IO
2) Side effects can be managed by biologics like tocilizumab based on IL6 expression
3) Using nonsystemic steroids or decrease duration of use of steroids
4) Changing timing of the use of steroids and using NLR.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):
1) In the initial cycles of IO, body's T cells will be primed and after that steroids will have less effect on those primed T cells
2) Biologics like tocilizumab were used for CAR-T related CRS. Similar approach can be developed based of IL6 or other inflammatory marker elevation
3) Instead of oral prednisone, nebulization/MDI steroids for pneumonitis
4) As in COVID, we used to look at NLR before deciding use of steroids/biologics. Similar approach can be developed for cancer patients with IO related adverse events.
5) For premedication of steroids -->previous day evening dose followed by morning /afternoon IO administration can be done if steroids can't be omitted

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Full Name:
Sakthi Vignesh D

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Government Kilpauk Medical College (GKMC), Chennai

State:
Tamil Nadu

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
Impact of steroids on cancer immunotherapy
Using steroids before start of ICI is associated with poorer outcomes, because steroids prevent the initial priming & expansion of tumor-specific T-cells, impair T-cell trafficking and memory cell formation.
However, steroids started after initiation of ICI, for treatment of irAE does not significantly reduce efficacy of ICI. Hence, if at all patients needs prednisolone, 10mg prednisolone is generally accepted threshold for initiation of ICI
Steroids used as premedication as a short term-high dose along with immuno-chemo regimen, does not have seem to negative impact outcomes according to studies.

When planning for ICI, if patient on steroid, the indication for currently on steroids needs to be scrutinised- whether due to cancer related reason (brain mets edema, peritumoral edema, bone mets pain) or due to non-cancer related reason (COPD, pneumonitis, arthritis autoimmune disease flare ups requiring high dose steroids). ICI can be started in such non cancer related cases, after steroids are tapered and reduced to the accepted threshold levels of 10mg equivalent of prednisolone.
Steroids started for treatment of irAE, generally have no adverse effect on ICI outcome, since robust anti-tumor effects by the ICI is already formed. Hence, more than grade 2 irAE can be treated aggressively with high dose steroids and can be tried to taper, as early as possible and start ICI at the earliest.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):
Solution & approach to balance potential benefit of steroids & reduction of ICI efficacy -

1. If the patient is planned to start on ICI, initially in the early diagnosis phase itself, care should be taken not to start on steroids for any reason, unless the situation warrants it as an emergency & associated with life saving benefit. If at all needed, the dosage should be kept to a minimum or it should be tapered to a lower dose (<10mg prednisolone equivalent), as early as possible.
2. If steroids are started for any non-oncological reasons, (for flare-ups or any other reasons), it should tapered to the lowest possible dose as early as possible, or it can be changed to other non-steroid regimens whenever possible. Whenever local (non-systemic) steroids can be used, it can be changed accordingly (topical, nebulisation).
3. Non-oncology doctors should be made aware of this influence of steroids on ICI pathway, so that they may treat cancer patients accordingly, following a rationale use of steroids.
4. Patients initiated on ICI, should be educated properly & periodic review & assessment done (phone calls or regular clinic visits), so that irAEs can be watched in Grade 1 itself and treated in the initial stage itself and reducing need for high-dose steroids.
5. Bigger named oncology association (ASCO, ESMO, ISMPO, SITC) can create guidelines for rationale use of steroids, in cancer patients on ICI therapy. This can be a standard operating protocol for both oncologist & non-oncologist treating cancer patients on ICI therapy, which can reduce the irrational use of steroids.

Full Name:
Avinash Ranjan

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Regency Hospital, Kanpur

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Uttar Pradesh

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
To ensure safe and effective use of steroids so that immunotherapy benefits are maintained while side effects are properly controlled, without unnecessary suppression of the immune response.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Steroids suppress the immune system and can reduce the effect of immunotherapy, which depends on immune activation. However, they are important to treat immune-related side effects, so they must be used carefully.

Optimal timing

Avoid steroids before starting immunotherapy unless absolutely necessary. Do not use routinely early without indication. Use during treatment only for moderate-to-severe toxicity.

Give lowest effective dose for shortest duration, then taper.

Balancing benefit vs risk

Use steroids only when clearly needed

Prefer local therapy (topical/inhaled) for mild toxicity. Start low dose, taper early

Restart immunotherapy once toxicity improves.

Individualization

Base decision on toxicity severity and organ involved. Consider patient condition, cancer type, and urgency. Account for comorbidities (diabetes, infection risk). Use steroids in the right patient, at the right time, in the right dose.

Full Name:
Reshma Abraham

Name of the Institution:
Manipal hospital, Bangalore

State:
Karnataka

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

How do we optimally balance the use of corticosteroids and other immunosuppressive interventions for diverse clinical indications in oncology—including as premedication, immune-related adverse events, symptomatic metastases, cerebral edema, cancer-related complications, and supportive care needs; while preserving the efficacy and durability of response to immunotherapy?

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

From across trials and studies, three factors are known to dampen the response of immune checkpoint inhibitors when steroids are co-administered: the timing of initiation—steroids started within 30 days to 3 months of ICI initiation are associated with reduced response rates; the dose—particularly >10 mg prednisolone equivalent; and the duration—prolonged exposure, even at low doses, carries cumulative impact. While ASCO guidelines note that steroid premedication is generally not detrimental to ICI activity, the underlying biological concern justifies our active efforts to minimize steroid exposure wherever feasible.

1. Day of Infusion—Minimize Steroid Exposure

- Where feasible and cost is not a constraint, switch to steroid-sparing regimens with proven benefit (e.g., nab-paclitaxel in place of paclitaxel)
- For platinum-based chemotherapy where dexamethasone cannot be avoided, use the minimum effective dose and we should still actively work toward de-escalation and minimize steroid exposure especially in the first 1-3 months (~first 3-4 ICI doses)
- Engage the clinical pharmacology team (if available at your centre) to assist in structured CINV assessment using a pre-formed proforma capturing**:**
  - Number of episodes of nausea and vomiting in the inter-cycle week
  - Number of symptomatic days
  - Cumulative use of rescue antiemetics
- Use this data-driven assessment to guide a careful, cycle-wise dexamethasone de-escalation strategy

  Two approaches:
  - (a) Start low and escalate only if needed or
  - (b) Start at an intermediate dose and actively taper in subsequent cycles with close CINV monitoring
- Where affordable, substitute with alternative stronger NK1 receptor antagonists, olanzapine etc.
- Entrust cycle-wise steroid intake tracking to clinical pharmacology students/colleagues and generate our own institutional data with regard to this approach if successful.

3. Management of irAEs and other indications

- Accurate grading at onset
- Follow NCCN/ESMO guidelines strictly
- Frequent reassessment and taper as rapidly as clinically appropriate

4. Future plans

- Prospectively designed non-inferiority phase trials to characterize the interference of prophylactic steroids with ICI efficacy.

Full Name:
Foram Joshi

Name of the Institution:
Kidwai Memorial Institute of Oncology, Bangalore

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Karnataka

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
There must be a tailored strategy for the utilization of steroids in oncology care, especially when used in combination with immunotherapy. Irrational use of steroids should be avoided, and institutional protocols must strictly follow guidelines regarding appropriate steroid indication, dose, frequency, and duration. Steroid use is associated with significant long-term adverse effects, and therefore judicious initiation along with early tapering and discontinuation is crucial.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

It is important to remember that steroids can interfere with the mechanism of action of immunotherapy through dysregulation of T-cell proliferation, suppression of cytokine mediators, and reduction in antigen presentation, ultimately leading to decreased efficacy of immunotherapy. Therefore, immunotherapy administration and management of immune-related adverse events should be handled by trained medical oncologists and professionals specializing in immuno-oncology.

In community settings where expertise may be limited, subcutaneous formulations should be encouraged whenever feasible to simplify administration and improve safety. Grade 2 and higher immune-related adverse events generally require steroid administration for toxicity management. Therefore, protocols emphasizing timely initiation, proper tapering, and early discontinuation of steroids should be encouraged.

At times, grade 4 immune-related adverse events may require pulse-dose steroid therapy, and management can become particularly challenging in immunosuppressed cancer patients. Patient education and caregiver counselling should form the foundation of management, with emphasis on early consultation with physicians at the onset of adverse reactions.

Cancer patients are often elderly and may have multiple comorbidities, especially diabetes mellitus, which can worsen with steroid therapy. Therefore, cross-consultation with diabetologists and other specialists is extremely important. Most patients require only a short course of steroids, and therefore long-term adverse effects such as central obesity, Cushingoid features, withdrawal symptoms, and osteoporosis are less common. However, there remains a need for multidisciplinary toxicity management teams to balance the benefits and risks associated with steroid use.

It is also important to emphasize the use of local steroid therapies whenever possible rather than systemic oral or intravenous administration, particularly in situations where local treatment can adequately control symptoms. There should be a strong focus on using the minimum effective steroid dose while encouraging the use of steroid-sparing agents whenever the risks of steroid utilization outweigh the benefits.

Steroid indications may also arise from conditions unrelated to immune-related adverse events. Even in such situations, the same principles of judicious steroid use, careful monitoring, and early discontinuation should be followed.

In today's era of molecular precision medicine and AI-based research, there is increasing importance in identifying patients who may require steroids, predicting duration of therapy, anticipating outcomes, and encouraging development and utilization of novel steroid-sparing agents.

Overall, steroids should be used judiciously in patients receiving immunotherapy and only when a clear clinical indication exists. Their administration and monitoring should ideally be supervised by skilled oncology professionals trained in immuno-oncology.

Full Name:
Habeeb K A

Name of the Institution:
VPS Lakeshore Hospital, Kochi

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Kerala

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

- Balance immunotherapy efficacy and toxicity control through rational steroid use
- Minimize unnecessary baseline and early steroid exposure that may reduce immune checkpoint inhibitor effectiveness
- Ensure timely and adequate management of immune-related adverse events (irAEs) without compromising patient safety
- Promote personalized, indication-based steroid strategies considering timing, dose, comorbidities, and treatment setting
- Encourage steroid-sparing approaches, structured tapering, and multidisciplinary monitoring to optimize long-term outcomes

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Steroids play a double-edged role in cancer immunotherapy. While essential for managing complications, they suppress T-cell activation, cytokine signaling, and antigen presentation—potentially reducing the efficacy of ICIs such as Pembrolizumab and Nivolumab. Thus, their impact depends on timing, dose, and indication.

The most critical factor is timing. Baseline steroid use (≥10 mg prednisone equivalent), particularly in Non-Small Cell Lung Cancer, is associated with poorer survival as it interferes with immune priming. Early use within the first 6-8 weeks may still blunt response and should be minimized. In contrast, late use, especially for immune-related adverse events (irAEs), has minimal impact since antitumor immunity is already established. Short-course, low-dose steroids generally have limited clinical effect.

Clinically, the goal is balancing toxicity and efficacy. The key principle is: treat irAEs adequately—undertreatment is more dangerous than theoretical loss of efficacy. Steroids are avoided in grade 1 toxicity, used at moderate doses for grade ≥2, and escalated for severe toxicity, followed by tapering over 4-6 weeks. Local or topical steroids should be preferred when feasible, and steroid-sparing agents like infliximab or mycophenolate reduce exposure.

Individualization is crucial. Steroids are appropriate for irAEs but should be minimized for brain edema or palliative symptoms, using the lowest effective dose. Patient factors such as diabetes, infection risk, and autoimmune disease influence decisions. Avoid routine baseline steroids in high tumor burden or neoadjuvant settings where immune activation is critical.

A simple framework is:

Timing → Indication → Dose → Taper → Monitor → Outcome.

Future directions include biomarker-guided decisions, digital toxicity monitoring, and multidisciplinary care. Ultimately, steroids are not the problem—their injudicious use is.

Full Name:
Deepesh Sharma

Name of the Institution:
Max Super Speciality Hospital, Saket

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New Delhi

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
Steroids remain indispensable for safe immunotherapy but should be viewed as a double-edged sword. Prioritize avoidance of baseline/early high-dose use for non-irAE indications, employ minimal effective dosing for toxicities, and use steroid-sparing tactics aggressively. This approach preserves the immune priming needed for durable responses while protecting patients from severe complications.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

1. Optimal Timing of Steroid Administration

- Avoid or minimize before/during initiation: Ideally, wean patients off high-dose steroids (≥10 mg/day) for at least 1 month before starting immunotherapy when feasible
- For irAEs: Start promptly when clinically indicated (Grade 2+ toxicities), but data favor allowing some time for immune activation first if safe. Later initiation (e.g., >50 days) associates with better response/PFS/OS in irAE subgroups.
- Taper strategy: Once symptoms improve to Grade 1 or less, taper over at least 4-6 weeks (longer for severe cases) to physiologic doses when needed. Avoid abrupt stops.

Rule of thumb: Early/high-dose for cancer symptoms = higher risk of blunting efficacy. Later/moderate for confirmed irAEs = generally safer.

2. Balancing Benefits of Side-Effect Management with Potential Efficacy Reduction

Use the lowest effective dose and shortest duration needed for safe irAE control. Some data support starting at 1 mg/kg instead of 2 mg/kg for many Grade 3 toxicities, escalating only if no response in 48-72 hours.

Steroid-sparing strategies:

-Early use of steroid-sparing agents (e.g., infliximab for colitis, mycophenolate for hepatitis, tocilizumab for some rheumatologic toxicities) to shorten/high-dose exposure.
-Topical/intralesional steroids or budesonide (gut-targeted) for milder cases.
-Supportive care optimization (e.g., antidiarrheals, hormone replacement for endocrinopathies) to delay or reduce systemic steroids.
-Monitor and reassess: Regular irAE surveillance + early intervention protocols can prevent escalation to high-dose steroids.
-Patient selection & education: Discuss risks/benefits; patients developing irAEs often have better outcomes overall—treat toxicity aggressively but judiciously.

3. Solutions for Individualizing Steroid Administration

Multidisciplinary Approach: Tumor board + irAE-specific teams (endocrinology, gastroenterology, pulmonology, dermatology) for personalized plans. Use biomarkers (e.g., inflammatory markers) and clinical status to guide decisions.
Risk Stratification:
-Baseline steroid users: Prioritize weaning + consider alternative symptom control or short delay in IO start.
-High irAE risk (e.g., combination IO, certain cancers): Proactive monitoring protocols + lower threshold for steroid-sparing agents.
-Low-resource settings: Standardized low-dose IO + vigilant but conservative steroid protocols + patient navigation for early reporting.

Guidelines Integration with Local Adaptation:
-Follow ASCO, NCCN, ESMO, or SITC irAE guidelines as backbone.
-Incorporate real-world Indian data (e.g., from NCG centers) and low-dose IO experience.
-Develop institutional protocols with dose tiers and tapering algorithms.
Emerging Tools:
- Prospective registries tracking steroid timing/dose vs. outcomes.
- AI-supported decision support for irAE grading and management.
- Biomarker-guided (e.g., baseline immune profile) patient selection for IO to reduce overall irAE incidence.

Full Name:
Vaidya Vedant Shripad

Name of the Institution:
JIPMER, Puducherry

State:
Tamil Nadu

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
Our main goal here is to navigate the delicate dance between using steroids and administering cancer immunotherapy. We want to pinpoint exactly when it's best to give steroids so we don't accidentally stop the immunotherapy from doing its job. Additionally, we aim to find practical, compassionate ways to relieve a patient's side effects without compromising their cancer treatment. Ultimately, we want to create a personalized roadmap that treats the patient as a whole person, tailoring these complex medical decisions to fit their unique life and body.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

1. Nailing the Optimal Timing

Don't put on the brakes too early: Try to avoid giving high doses of systemic steroids right before starting immunotherapy. Giving steroids upfront can suppress the immune system before it even has a chance to wake up and start fighting the tumor.

Later is generally safer: If a patient develops severe side effects after their immunotherapy has already kicked in, introducing steroids at that point is much safer. Research shows that stepping in later to calm down the immune system doesn't usually ruin the long-term cancer-fighting benefits.

2. Balancing Symptom Relief with Treatment Success

Start small and local: If a patient is experiencing mild side effects (like a minor skin rash), try to manage it with localized treatments—like topical creams instead of jumping straight to systemic steroid pills or IVs.

The "Lowest and Shortest" rule: When severe side effects pop up and systemic steroids are absolutely necessary to protect the patient's organs, use the lowest effective dose for the shortest amount of time possible.

Have an exit strategy: As soon as the patient starts feeling better, begin carefully tapering the steroids down.

Bring in backup if needed: If a patient isn't responding quickly to steroids, don't just keep them on high doses. Pivot early to "steroid-sparing" medications (like infliximab). This helps calm the inflammation without keeping the immune system suppressed for too long.

3. Individualizing Patient Care
Look at the whole picture: Before prescribing steroids, consider everything else going on in the patient's life and health. Do they have diabetes, an active infection, or an autoimmune history? Steroids can complicate these, so the plan needs to be customized around them.
Check their baseline: Use medical biomarkers to understand the patient's baseline immune health and predict their risk for severe side effects before treatment even starts.
Keep the conversation going: Rely heavily on real-time feedback from the patient. By constantly checking in on how they are feeling, care teams can tweak and adjust steroid doses on the fly, ensuring the treatment is always optimized for exactly what their body needs that day.

Full Name:
Dr. Chilamkurty Maitreyi

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Stanley Medical College, Chennai

State:
Tamil Nadu

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
Problem statement: Corticosteroids play a critical role in cancer care and for managing immune related toxicities, brain edema, breathlessness, antiemetics, cancer related pain, treatment associated symptoms. Poor timing of steroid exposure especially baseline or early high dose use around immune checkpoint inhibitor initiation may blunt the antitumour response activation, reduce treatment efficacy and worsen survival outcomes. In real world practice steroid prescribing remains inconsistent and is often used as immediate clinical need rather than a structured individualized strategy, particularly in settings with limited resources.
Objective-To implement a physician integrated precision steroid stewardship framework that optimizes timing, dose, indication and duration of corticosteroid use in Patients receiving immunotherapy while preserving efficacy, improving toxicity management and standardizing global best practice.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):
Solution: STEREO-ONC--Steroid Timing & Efficacy Risk guided Excellence in Oncology-precision steroid stewardship for Immunotherapy access. 3 pillar Implementation model for safer symptom control, preserved immunotherapy effectiveness, reduced practice variability and a reproducible physician guided model.
1. Timing Intelligence Protocol-Traffic light steroid timing tool embedded in App: RED: Baseline/high dose steroids (>10mg prednisone equivalent) near ICI initiation-mandatory review. AMBER: short course steroids for symptom stabilization--reassess within 48-72 hours. GREEN: Steroids for iRAEs management after immune priming when clinically indicated.
2. Physician Decision Navigator-AI assisted clinician dashboard integrating-cancer type, Immunotherapy regimen, Steroid Indication, Biomarkers/performance status, Infection risk, comorbidities. AI outputs individualized taper and steroid sparing alternatives.

3. Steroid sparing pathways Protocols for-Tocilizumab/siltuximab/Anakinra (selected iRAEs), Local radiotherapy for edema relief, Analgesic optimization, Non-steroidal symptom control bundles Pharma Industry Global partnership can support real world registry, clinical decision support platform, physician education grants, Global toxicity management pathways, and so improves treatment persistence, stronger real world outcomes data.
Example: A 58-year-old man with newly diagnosed Metastatic Non-small cell lung cancer planned for pembrolizumab with symptomatic brain metastases Imaging edema requiring dexamethasone.
STEREO-ONC Model converts a treatment conflict into a coordinated precision pathway. It triggers involvement of a rapid multidisciplinary team of medical oncologist, radiation oncologist, Neuro oncology if available within 24 hours. Immediate symptom stabilization, local RT integration, rapid daily steroid taper monitoring as physician guides, Immunotherapy readiness assessment using structured checkpoint before pembrolizumab initiation. Delay Immunotherapy initiation until optimal immune response balancing safety with efficacy.

Full Name:
Monish Balaji S

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Kilpauk Medical College, Chennai

State:
Tamil Nadu

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
To discuss nuances of steroid use during Immunotherapy

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):
Timing is everything: Avoid baseline or early high-dose steroids before starting immune checkpoint inhibitors unless lifesaving. Early exposure may blunt T-cell activation and reduce tumor response. Prefer delayed, short-duration steroid use after immunotherapy priming whenever clinically feasible.
Precision steroid scheduling: Use the lowest effective dose for the shortest duration. Pulsed dosing with rapid tapering minimizes immune suppression while still controlling toxicities such as pneumonitis, colitis, or cerebral edema.
Steroid-sparing alternatives: Integrate targeted anti-inflammatory agents (e.g., IL-6 or TNF-Î± inhibitors), localized radiation, inhaled/topical steroids, and supportive care to reduce systemic steroid dependence without compromising antitumor immunity.
Dynamic biomarker-guided care: Individualize steroid administration using biomarkers such as circulating lymphocyte counts, cytokine signatures, PD-L1 expression, ctDNA trends, and microbiome profiling to predict risk benefit ratio
Adaptive immunotherapy sequencing: Temporarily pause immunotherapy during severe immune-related adverse events rather than continuous co-administration with prolonged steroids. Restart therapy after immune recovery using response-adapted algorithms.
AI-driven personalization: Employ machine-learning models integrating genomics, toxicity history, organ function, and treatment response to tailor steroid timing, dosage, and taper schedules for each patient.
Multidisciplinary stewardship: Oncologists, immunologists, pharmacists, and palliative care specialists should jointly evaluate risk-benefit balance, ensuring symptom relief while preserving long-term immunotherapy efficacy and survival outcomes ultimately supporting treatment goals.

Full Name:
Dr Mohamed Thanish

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Stanley Medical College, Chennai

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Tamil Nadu

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
To develop an individualized, evidence stratified steroid management protocol for cancer patients on immunotherapy that distinguishes baseline immunosuppressive steroid use from IRAE driven steroid requirements, providing specific dose thresholds, timing guidance, and steroid sparing alternatives that preserve ICI efficacy without compromising patient safety.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):
When a patient on pembrolizumab develops grade 2 pneumonitis, the reflex response in most units is 1 mg/kg prednisolone and ICI suspension. This is the right response to that irAE. What happens next is where the problems begin. The pneumonitis resolves. The question of whether to rechallenge, at what steroid dose, and whether chronic steroid exposure will blunt any future immune response is rarely answered systematically and almost never formally documented.
The evidence on dose threshold is clearer than most clinicians realise. Baseline corticosteroid use above a prednisolone-equivalent of 10 mg daily is associated with significantly inferior outcomes in patients receiving ICI for NSCLC, as demonstrated by Arbour and colleagues in JCO 2018. A patient on 8 mg prednisolone for adrenal insufficiency should not be denied immunotherapy. A patient on 16 mg dexamethasone for cerebral oedema requires a fundamentally different conversation. These two clinical situations demand different protocols, not the same one.
The protocol I propose begins with mandatory steroid dose documentation at ICI initiation, with automatic flagging of any dose exceeding 10 mg prednisolone equivalent. For patients requiring dexamethasone for brain metastases, a corticosteroid minimization pathway involving radiation oncology should be completed before ICI commences wherever possible.
For irAE management, the steroid sparing approach must be organ specific rather than a single protocol applied uniformly across all presentations.
For ICI related colitis at grade 1 to 2, oral budesonide 9 mg daily should precede systemic prednisolone. Its mucosal anti-inflammatory effect occurs with negligible systemic bioavailability through extensive hepatic first-pass metabolism, preserving HPA axis function. Steroid-refractory colitis warrants vedolizumab over infliximab as the preferred escalation, because its gut selective alpha 4 beta 7 integrin blockade restricts immunosuppression anatomically to the gastrointestinal tract while leaving systemic antitumour immunity relatively intact.
For ICI hepatitis, infliximab is contraindicated due to its own hepatotoxic potential. Mycophenolate mofetil at 500 to 1000 mg twice daily is the guideline supported steroid sparing agent and should be introduced within five days of inadequate steroid response.
For endocrine irAEs hypothyroidism, primary adrenal insufficiency, ICI related type 1 diabetes the steroid-sparing strategy is hormone replacement, not immunosuppression. These conditions represent destruction of endocrine tissue, not ongoing immune attack amenable to suppression. Steroids are indicated for hypophysitis only in the presence of mass effect or acute adrenal crisis.

For cutaneous irAEs, topical corticosteroids of appropriate potency manage most grade 1 to 2 presentations without systemic exposure. ICI related bullous pemphigoid responds to doxycycline 100 mg twice daily combined with nicotinamide, an established steroid sparing dermatological regimen.
For neurological irAEs, Guillain Barre syndrome demands IVIG or plasmapheresis, and corticosteroids are ineffective in GBS and may worsen outcome. Myasthenic crisis similarly requires IVIG, with pyridostigmine used cautiously.
For pneumonitis, where systemic steroids are non-negotiable, the steroid harm reduction strategy is prophylactic cotrimoxazole for Pneumocystis pneumonia in anyone on high dose steroids exceeding four weeks a step that is consistently omitted in routine practice and should be protocol mandated.
The goal is not to avoid steroids when irAEs demand them. It is to ensure every steroid decision is a deliberate clinical choice made with full awareness of what it may cost the patient oncological.

Full Name:
Veena P S

Name of the Institution:
Tirunelveli medical college, Tirunelveli

State:
Tamil Nadu

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
Steroids can decrease the immunotherapy efficacy and hence avoid prophylactic steroids along with IO and use personalized dosing in iRAE.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

- Optimal timing of steroids in immunotherapy is in the event of an immune related side effect. Here it ranges from starting of a low dose oral steroids to escalate the dose as necessary and gradual tapering
- No steroid premedication with immunotherapy
- Can give single dose steroids if chemo is used along with IO or can give chemo the next day

For the balancing of the potential benefits of managing side effects and potential reduction in immunotherapy efficacy

- Use of steroids only on irae
- Use the lowest possible dose and tapering off (dose personalisation)
- Rational use as per the severity of irae
- Steroid sparing agents if no adequate response
- Multimodality consultation in optimising drugs in case of other auto immune side effects
- Early diagnosis of irae and treatment reduces the severity
- Biomarker (IL6, TNF alpha) driven approaches for predicting the irae severity
- Integrating various algorithms and digital health monitoring.

Full Name:
Jarfin I M

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Gleneagles Health City, Chennai

State:
Tamil Nadu

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
To use steroids in patients receiving immunotherapy in a way that safely controls toxicity and symptoms without unnecessarily compromising anti-tumour immune response.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):
Steroids are both essential and potentially problematic in immuno-oncology. Baseline or prolonged high-dose steroids before starting immunotherapy may reduce efficacy, especially when used for cancer-related symptoms such as dyspnea or brain edema. However, timely steroids remain lifesaving in immune-related adverse events like pneumonitis, colitis, hepatitis, myocarditis or neurotoxicity.
Timing is therefore critical. Steroids should be avoided routinely before immunotherapy unless clinically necessary, but once significant immune toxicity occurs, delayed steroid initiation can be dangerous. The goal is early recognition, appropriate dosing and careful tapering rather than fear of using steroids altogether.
Management must balance tumour control with patient safety. Mild toxicities may need observation or low-dose steroids, while severe toxicities require rapid escalation, immunotherapy interruption and sometimes second-line immunosuppression. Every centre using immunotherapy should have standardized irAE protocols and multidisciplinary involvement including pulmonology, gastroenterology, endocrinology, cardiology and critical care.
Steroid use should also be individualized. A young curative-intent patient with grade 3 hepatitis differs greatly from a frail metastatic patient with infection risk or diabetes. In Tamil Nadu, clinician education and nurse-led toxicity screening can help early identification even in smaller centres.
Roche can support through immune-toxicity education, treatment algorithms, registry development and patient-awareness tools.
A mature immunotherapy practice is not defined by avoiding steroids at all costs. It is defined by knowing exactly when steroids protect life, when they may blunt benefit, and how to navigate that balance with wisdom.

Full Name:
Livin T

Name of the Institution:
Madurai Medical College, Kanyakumari

State:
Tamil Nadu

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
We have to aggressively individualize the dose based on what is physically happening in the bed in front of us.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Throwing steroids at a patient who is actively on checkpoint inhibitors honestly feels like a double edge sword. We already know that handing out high-dose baseline steroids right before an infusion basically kills the drug's efficacy. The T-cells are just totally suppressed before they even reach the tumor microenvironment. But the reality on the ground in a busy Madurai or Chennai clinic is completely different. When a patient crashes into the ER with a severe grade 3 pneumonitis from their neoadjuvant immunotherapy, you really have no choice. You absolutely have to shut down that autoimmune storm immediately before you even think about taking them to the OR.

And this is where timing becomes everything. Giving steroids to manage a severe toxic crisis after the immune system has already recognized the tumor doesn't actually seem to ruin the long-term survival curves. Figuring out that delicate balance is incredibly stressful.

We have to aggressively individualize the dose based on what is physically happening in the bed in front of us. If a patient is frail and their nutritional baseline is already poor, we might have to taper those steroids agonizingly slowly to prevent a fatal rebound toxicity. But if their system handles the crisis well, we pull the immunosuppressants back down fast. We want that tumor exposed to the active immunotherapy again as quickly as safely possible.

It totally relies on intense clinical judgment. If we panic and blast them with high-dose methylprednisolone for a mild skin rash, we just wasted a drug the family probably emptied their bank accounts for. So, we watch the symptoms closely. We only drop the heavy systemic hammer when genuine organ failure is actually staring us in the face.

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Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

The way we manage cancer has changed with the of immune checkpoint inhibitors (ICIs) coming in, which reactivate the T-cells, helping the immune system fight against tumor. However, this immune boost can cause immune-related adverse events (irAEs), which may affect almost any organ. Corticosteroids have long been the main treatment for these inflammatory side effects because they quickly suppress the immune response.

As a resident, using steroids whether for preventing CINV, managing irAEs, providing symptom relief, or handling emergencies, there is challenge of steroid-induced checkpoint inhibitor antagonism and latent tuberculosis (TB) reactivation.

As immunotherapy becomes more common in our hospital, thanks to PAPs, I have noticed that patients are also being exposed to steroids. This questions, if using steroids could reduce the effectiveness of these costly treatments and reduce outcomes.

The SMART-IO framework, effective “steroid stewardship” is needed to preserve immunotherapy efficacy, reduce unnecessary toxicity, and improve both clinical and financial outcomes for patients.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Optimal timing of steroids:

1.The Priming Phase (0-8 Weeks): Steroids in this phase significantly decrease long-term benefits, must be strictly avoided as they blunt the anti-tumour T-cell population before it reaches the tumor microenvironment. RADIOHEAD pan-tumour cohort, steroid use was associated with a significantly worse OS (HR 1.75)

2.The Effector Phase (Beyond 8 Weeks): The development of irAEs often signals that the immune system has successfully breached the tumor's defences, and steroids initiated 2 months after ICI initiation to manage irAEs do not appear to compromise efficacy.

Balancing management of irAE & treatment efficacy:

1. Digital Remote Monitoring (DRM) and electronic Patient-Reported Outcomes (ePROs) through platforms like OnkoVed, OncoCare, and India's MODEMS can help detect toxicities early, instead of waiting for Grade 3 toxicities, enabling early identification when topical or local steroids may still be sufficient, avoiding systemic steroids.

2.Clinical biomarkers: baseline elevations in troponin T, hs-CRP, and NT-proBNP, have a higher risk of developing myocarditis or heart failure, and would be prioritised for closer digital monitoring and early prophylactic intervention with steroid-sparing biologics.

3. AI-Driven Early irAE Prediction with PROphetirAE, can identify biological signatures associated with severe irAEs from a single baseline blood sample, by analyzing thousands of host proteins and their interactions.

4. Steroid-Sparing Strategies: Tocilizumab (IL-6 blockade) and Vedolizumab (gut-selective immunomodulation) can effectively manage toxicities while potentially preserving immunotherapy efficacy.

Solutions:

1. The STEREO-IO (Steroid-Responsive and Evaluation of Outcomes in Immuno-Oncology) score is a risk stratification tool calculated at baseline and after the first cycle of immunotherapy, which combines clinical factors, biomarkers, treatment type, comorbidities, inflammatory markers, ctDNA response, and baseline steroid use to generate a score from 0-8. Higher scores identify patients at greater risk of severe immune-related adverse events, prolonged steroid exposure, and reduced immunotherapy benefit. These patients may require closer monitoring, early steroid tapering, or transition to biologic therapies to minimize steroid dependence.
2. Nurse-Led Toxicity Navigation system, (Symptom and Urgent Review Clinic (SURC) triage systems) can help identify irAEs early, with many concerns managed via telephone, can help rural patients on ICI, tapering steroids.
3. Indication-Based Steroid Tapering
   If Palliative, actively taper and discontinue, swapping them for non-steroidal alternatives
   If Non-Palliative (autoimmune disease, cerebral oedema): Taper to the lowest possible physiologic dose (preferably <10mg prednisone-equivalent daily) before the first dose of immunotherapy.
4. Track the Neutrophil-to-Lymphocyte Ratio (NLR) at each cycle. Rising NLR is an early marker of subclinical, steroid-driven myeloid shifts prompting immediate steroid-taper reviews.
5. Studies from TMH show that LOW-DOSE nivolumab can provide meaningful clinical benefit at a fraction of the standard cost.
6. Chronomodulation: As seen in the LUNG TIME trial for NSCLC, scheduling the first 2-3 "priming" cycles in the morning increases responsiveness, potentially allowing the immune system to build sufficient momentum to tolerate steroids later, if used.

The future of immuno-oncology in India is not about avoiding steroids, but about Precision Steroid Stewardship—delivering the right immunomodulation to the right patient at the right immune phase. We can transform the "double-edged sword" of steroids into a precisely managed tool for cure.

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Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
Objective: The major goal is that patient may receive corticosteroids safely and appropriately when necessary and effectiveness of cancer immunotherapy is also maintained.
The objective is to safely adverse effects related to immune therapy and cancer-related symptoms without hampering anti-tumor immune responses.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):
Current Gap
The overall cumulated steroid exposure during major phases of immunotherapy remains fragmented, frequently undocumented and very challenging in terms of decision making because patients often had already received steroids from local healthcare providers for symptomatic relief and supportive care.
These real word concerns are often overlooked. Hence major discussions about steroids and immunotherapy primarily emphasize reducing doses, delaying administration, and quickly tapering off

Solution:
Immunotherapy Steroid Stewardship Pathway
This model is inspired by antibiotic stewardship programs success
Any patient who is being started on immunotherapy must receive an Immunotherapy Alert Card (physical or digital).
This card informs healthcare providers that corticosteroid exposure should be meticulously documented and communicated to the oncology team.
A trained oncology nurse should make record of all steroid exposure since the last visit, including oral and intravenous forms.
This overall Steroid administration should be covered up through a risk-stratified approach.
There should be mandatory steroid exposure checkpoint should be established before each immunotherapy cycle.
Overall Low-dose and short-term exposure of steroids can continue without major changes, however if patient had significant cumulative exposure, it immediately prompts an oncologist to amend or format the timing of immunotherapy, develop tapering strategies, or consider for steroid-sparing alternatives.
This framework shifts the emphasis from merely reducing steroid use to enhancing visibility, accountability, and coordinated decision-making throughout the patient's entire healthcare journey, thereby protecting immunotherapy effectiveness while ensuring patient safety.

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Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
AI enabled dose calculator for oncology patients

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):
Steroid plays a crucial role in management of cancer.
But it is a double edge sward, we are working to develop an AI model which using patient characteristics and side effect profile can guide us with dosing and dispensing schedule.

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Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
To establish evidence-based strategies for the safe and effective use of steroids in patients receiving cancer immunotherapy by minimizing the negative impact on immune activation while ensuring optimal management of immune-related adverse events (irAEs) and patient safety.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):
Steroid administration during cancer immunotherapy requires careful consideration of timing, dose, duration, and clinical indication. The objective is to preserve the anti-tumor immune response while effectively controlling immune-related toxicities. Whenever possible, unnecessary baseline steroid use before starting immunotherapy should be avoided, as early or prolonged immunosuppression may reduce treatment efficacy. However, steroids remain essential for managing moderate to severe immune-related adverse events.

Optimal timing involves restricting steroid use before immunotherapy initiation unless clinically required, such as for cancer-related symptoms, brain metastasis edema, or autoimmune conditions. When steroids are needed for immune-related toxicities, early administration at appropriate doses can prevent complications without significantly compromising outcomes. Gradual tapering over several weeks is recommended to reduce toxicity recurrence.

Balancing efficacy and safety can be achieved through standardized toxicity management protocols, multidisciplinary decision-making, and the use of steroid-sparing strategies. Alternative immunosuppressive agents may be considered for steroid-refractory toxicities to reduce prolonged steroid exposure. Regular monitoring of symptoms, immune-related adverse events, and treatment response helps optimize management.

Individualized steroid use should consider cancer type, immunotherapy regimen, severity of toxicity, patient comorbidities, and treatment goals. Biomarkers and clinical risk assessment may help identify patients who require cautious steroid use. Education of patients and healthcare teams regarding early recognition of immune-related adverse events can facilitate timely intervention.

A personalized approach ensures that steroids are used as a therapeutic tool rather than a barrier to successful immunotherapy outcomes.