The 4E: Engage, Educate, Equip and Empower
A framework for the effective management of immunotherapy-induced adrenal insufficiency

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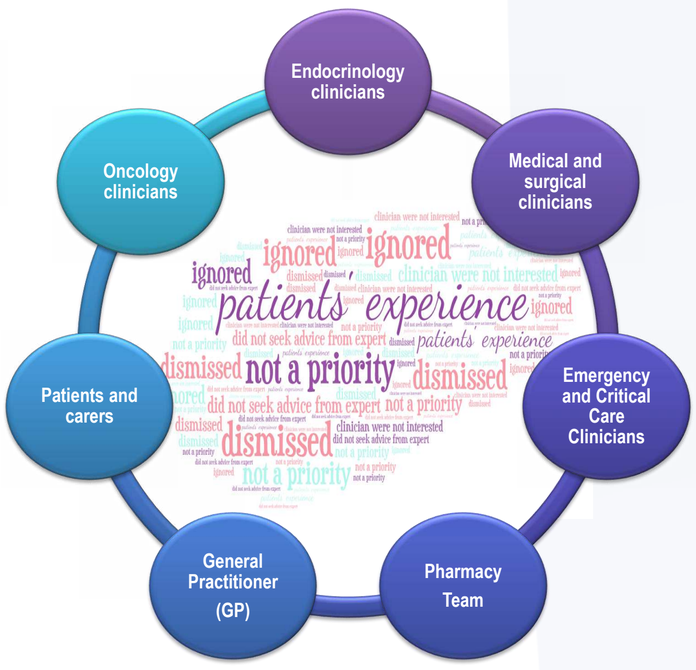
Introduction

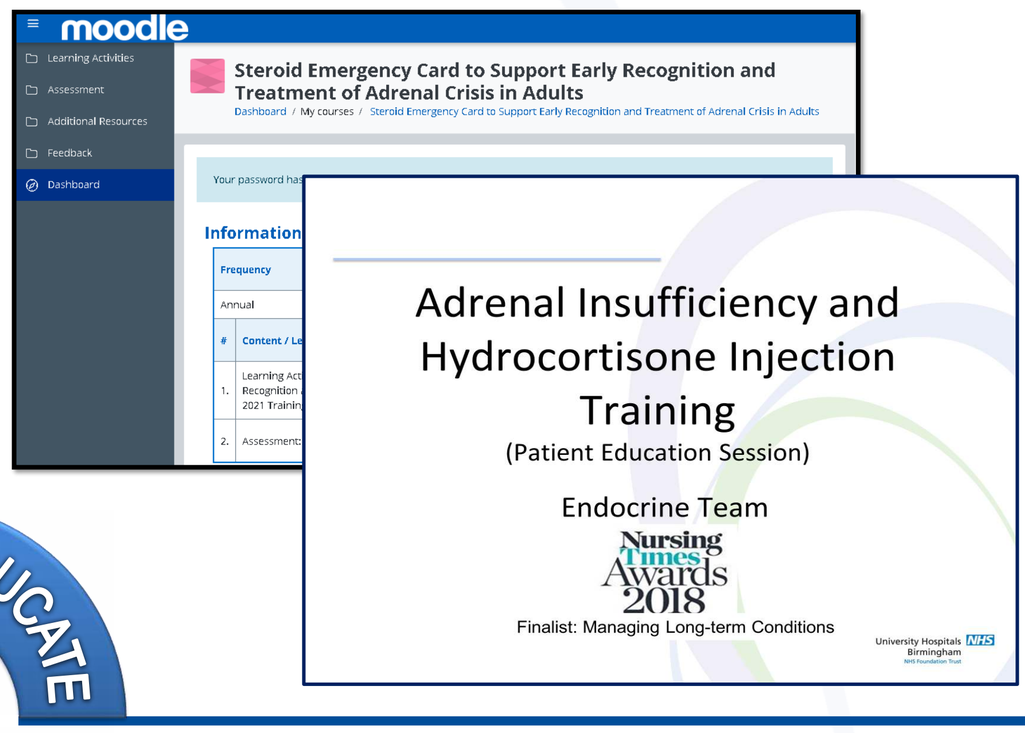
Immune checkpoint inhibitors (ICI) have revolutionized cancer treatment but are associated with significant autoimmune endocrinopathies including, but not limited to, adrenal insufficiency[1]. Patients with adrenal insufficiency (AI), continue to face many challenges including: dealing with symptoms; managing medication regimens; prevention and management of complications, and effective engagement and interactions with healthcare providers[2]. In patients with AI, adrenal crisis (AC) continues to lead to unnecessary deaths[3,4]. We illustrate how University Hospitals Birmingham (UHB) NHS Foundation Trust used the 4E (Engage, Educate, Equip and Empower)[5] as a framework in providing optimal care for patients with AI.

Patients with AI may present to different clinical services for a variety of reasons. Therefore, it is important that all clinicians and stakeholders that patients may come in contact with, are aware on how to recognise and manage AI and AC. At UHB, there is a well-established engagement with clinical and non-clinical staff who developed and regularly evaluate the provision of care to patients with AI.



ENGAGE

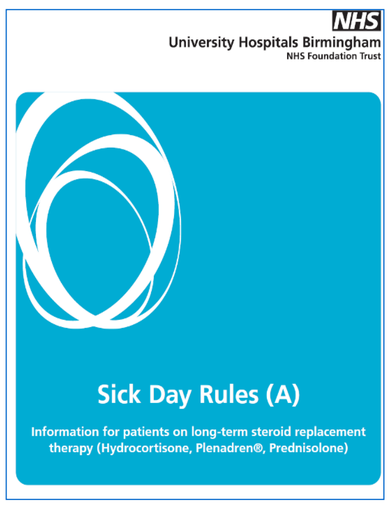
The endocrine team provides regular education sessions for staff as well as patients on AI and AC. Additionally, there are learning resources available for clinical staff to update them on the management of AI and AC (Moodle session). The endocrine team runs a monthly education session for patients and their families.

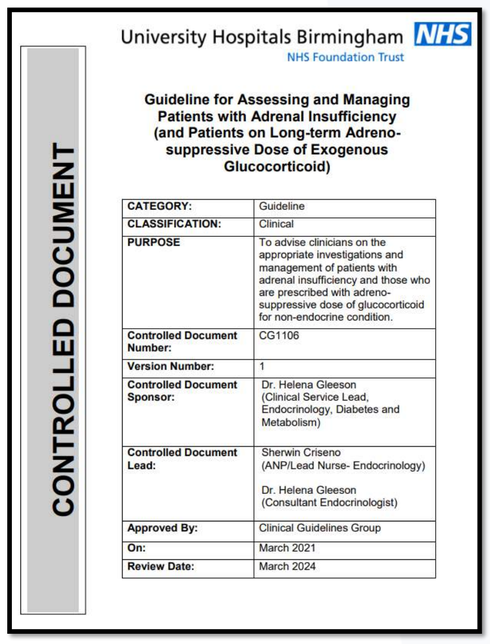


EDUCATE

4E

EQUIP

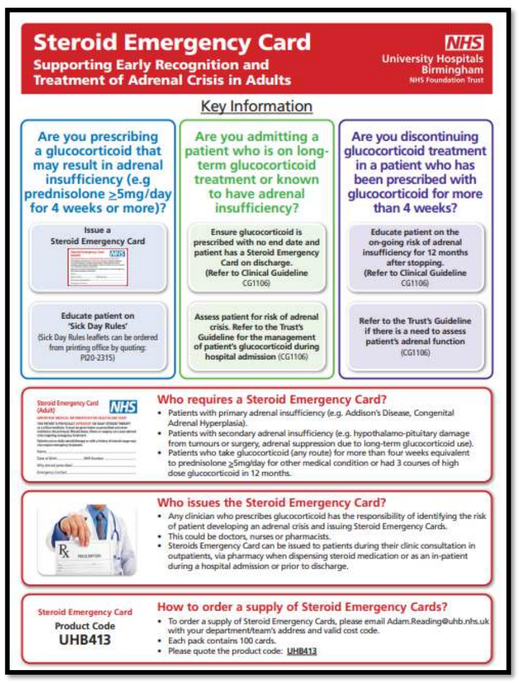




Helpline

Clinicians are equipped with tools including: a comprehensive guideline; simple algorithms; access to steroid care (SEC) and direct access to the endocrinology helpline. Patients are also equipped with SEC, hydrocortisone injection kit, care plan, as well as means of accessing expert support and advice through our helpline.

EMPOWER



Well-engaged, well-informed and well-equipped patients are likely to be empowered to facilitate effective self-management of their condition. Similarly, clinicians are likely to be empowered to provide timely and appropriate life-saving interventions.

Conclusion

Patients with AI are at risk of life-threatening AC that contributes to the excess mortality in patients with AI. The 4E framework (Engage, Educate, Equip and Empower) provides a systematic and effective system to support the prevention, early recognition and effective management of AC in adults.

References

1. Husebye, E.S., Castinetti, F., Criseno, S., Curigliano, G., Decallonne, B., Fleseriu, M., Higham, C.E., Lupi, I., Paschou, S.A., Toth, M. and van der Kooij, M., 2022. Endocrine-related adverse conditions in patients receiving immune checkpoint inhibition: an ESE clinical practice guideline. European journal of endocrinology, 187(6), pp.G1-G21.
2. Dineen, R., Thompson, C.J. and Sherlock, M., 2019. Adrenal crisis: prevention and management in adult patients. Therapeutic advances in endocrinology and metabolism, 10, p.2042018819848218.
3. Puar, T.H., Stikkelbroeck, N.M., Smans, L.C., Zelissen, P.M. and Hermus, A.R., 2016. Adrenal crisis: still a deadly event in the 21st century. The American journal of medicine, 129(3), pp.339-e1.
4. NHS England (2020) 'National Patient Safety Alert- Steroid Emergency Card to support early recognition and treatment of adrenal crisis in adults', NHS England. [Online]. Available at: https://www.england.nhs.uk/publication/national-patient-safety-alert-steroid-emergencycard-to-support-early-recognition-and-treatment-of-adrenal-crisis-in-adults/.
5. Milligan, E. and Ragland, R.G., 2011. Educate, equip, engage, empower: A framework for preparing preservice teachers in civic education. Action in Teacher Education, 33(1), pp.94-107.

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