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Clinical observation of significance

Marked improvement in a severe case of narcolepsy but not cataplexy on cortisol replacement therapy after decompensation of a primary non-Addison adrenal insufficiency

Abstract

After the short-term administration of 20mg/d prednisolone (orally) in a previously non-steroid-treated patient with iron storage disease, the steroid, which is omnipresent in clinical practice, led to paradoxical foudroyant symptoms, but above all to a reduction of 80% in the extreme narcoleptic symptomatology, not however in the cataplectic component. Masked primary adrenal insufficiency was revealed. An improvement in narcoleptic symptoms of about 50% was also maintained under oral hydrocortisone-only substitution therapy.

Unexpected improvement of narcolepsy

A short-term administration at a maximum dose of up to 35 mg/d prednisolone (orally), adjunctive to outpatient surgical treatment of a severe acne inversa flare, led to foudroyant complications in a male patient (47/ European) suffering from a genetic iron metabolism disorder, who had not received any systemic corticosteroids for 26 years. The emergence of these remarkably severe and odd complications was caused by a sudden decompensation of a largely masked adrenal insufficiency, primary but non-Addison in nature. (The details will be disclosed in a proper case study at a later

date). Once the patient was clinically stable again therapy with prednisolone was continued at a somewhat lower dose (50%) and in a different pattern. Soon the patient and the physicians caring for him noticed that the patient's quite extreme form of narcolepsy[2,3,4,5,7] (an average of 5 seizures a day lasting up to 90 minutes each plus prolonged prodromal symptoms) improved rapidly by >95%. The patient's debilitating brain fog also improved by remarkable 50%. Severe cataplexy, which is typically present in high-grade narcolepsy, did also improve, however not significantly. Similar cases were described before.[8] After confirming the diagnosis of NTBI iron-induced primary adrenal insufficiency with residual activity of the adrenal cortex, the patient was put on permanent substitution therapy with hydrocortisone 0.35mg/kg/d divided into two doses per day. Under this lower dosage compared to the initial small Prednisolone boost the patient's narcolepsy became worse again, but only up to about 75% compared to the baseline of the previous two years, which is still a significant improvement. Our task and that of all clinicians and scientists should now be to determine the mechanism responsible for this unexpected effect and possible ways to safely treat patients with therapeutic doses of regular prednisolone, while keeping the unfavorable effects of this steroid as low as possible. If the reason for this effect is a non-specific inflammation inhibition in the brain many patients with severe narcolepsy could be effectively treated with prednisolone. Should the observed effect be an indirect change of endocrinological cascades due to steady attacks (infiltration mechanism) on the adrenal gland cortexes by NTBI (iron) less patients with narcolepsy would profit from a prednisolone therapy.

Conclusion

Due to the relative harmlessness of a short-term treatment with prednisolone (20 to 40mg/d for 5 days), it would be a possibility to try the effect of this steroid on the number and duration of narcoleptic attacks in the case of severe and therapy-refractory narcolepsy in adults.[8]

Outlook

Our team will publish more widely regarding this phenomenon in the course of the coming 24 to 48 months.

Conflicts of interest

None declared.

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