Journal of Pharmaceutical Research International

Volume 35, Issue 1, Page 1-3, 2023; Article no.JPRI.95220
ISSN: 2456-9119
(Past name: British Journal of Pharmaceutical Research, Past ISSN: 2231-2919, NLM ID: 101631759)

Case Study of Patients Using Injectable Trancinolone Acetonide with Neurological Complications

E. Qi [a], Peng Jiayi [a], Zhou Ziyin [a] and Wen Xianjie [a*]

[a] Department of Anesthesiology, The Second People`s Hospital of Foshan and Affiliated Foshan Hospital of Sourthern Medical University, Guangdong Province, China.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JPRI/2023/v35i17295

Open Peer Review History:
This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: https://www.sdiarticle5.com/review-history/95220

Case Study

Received: 23/10/2022
Accepted: 26/12/2022
Published: 05/01/2023

ABSTRACT

Aim: Through the analysis of two cases of serious neurological complications after triamcinolone acetonide use, this case study warns that the risk of serious neurological complications should be paid attention to when triamcinolone acetonide is used clinically.
Presentation of Case: In this paper, we reported two cases of severe neurological complications caused by triamcinolone acetonide. One case was severe hearing loss on the same side after triamcinolone acetonide was injected around the ear to treat scars. After 2 months of treatment, the patient's nausea, vomiting and vertigo improved, but the hearing damage did not improve. The other case was severe complications of lower limb paralysis after triamcinolone acetonide was injected into the spinal canal. Two hours after the injection of the drug, the patient developed paraplegia of both lower limbs. After three months of treatment, it still did not improve.
Discussion and Conclusion: Triamcinolone acetonide is a suspension, insoluble in water, with a large number of particles gathering, and the largest particle is greater than 500μm. It has been reported that the medium-sized particles of adrenocortical hormone with a diameter of 51-1000μm

**Corresponding author: E-mail: wenxianjie166@163.com;*

can easily block the blood vessels, especially the anterior spinal artery. In clinical practice, we should pay attention to the disastrous neurological complications caused by triamcinolone acetonide hydrochloride, and take relevant preventive and coping measures.

Keywords: Neurological complications; triamcinolone acetonide.

1. INTRODUCTION

Triamcinolone acetonide, a long-acting adrenocortical hormone, is commonly used in the treatment of rheumatoid arthritis, allergic dermatitis, skin scars and chronic pain in the joint cavity or epidural space injection [1,2]. It is widely used in clinical treatment because of its powerful anti-inflammatory, immunosuppressive effects and Inhibition the proliferation of fibrous connective tissue [3-6]. It can reduce the permeability of capillary wall and cell membrane, reduce inflammatory exudation, and reduce inflammatory swelling and pain. Triamcinolone acetonide can prevent or inhibit cell-mediated immune response, reduce the expansion of the original immune response, inhibit the formation and release of histamine and other toxic substances, and can be used for the treatment of acute inflammatory reaction. It can prevent the formation of adhesion and scar. In clinic, it is used for the treatment of scar pain after surgery, especially for patients with scar constitution. However, we also should be alert to the disastrous neurological complications caused by triamcinolone acetonide. Kuek *et al* described the first report of cone infarction imaged after Ganglion impar block (GIB) in a 17 year old patient with coccygeal pain using particulate steroids in a theater. After GIB, the patient immediately developed a temporary neurological deficit in the lower extremity, and was unable to move his legs for 24 hours. These include back and leg pain, decreased strength and motor ability, increased tone, quick reaction, reduced light touch, and T10 proprioception of the legs [7].

2. PRESENTATION OF CASE

Recently, two cases of triamcinolone acetonide related catastrophic neurological complications occurred in the Second Hospital of Foshan City, Guangdong Province, China. The first case was one 18-year-old female, ASA grade I, without any basic disease, in general good condition. Because of the scar of the earlobe, the cosmetic physician injected triamcinolone acetonide and lidocaine injection into the scar. The patient immediately developed local large-area ecchymosis, and the ipsilateral hearing was severely damaged, resulting in nausea, vomiting and vertigo. After 2 months of treatment, the patient's nausea, vomiting and vertigo improved, but the hearing damage did not improve. The second patient was a 55-year -old female. Due to postherpetic neuralgia, the left T10, T11 and T12 nerve roots were blocked under the guidance of X-ray. The injection drug was triamcinolone acetonide combined with lidocaine. The operation was smooth. Two hours after the injection of the drug, the patient developed paraplegia of both lower limbs. After one month of treatment, it still did not improve.

3. DISCUSSION

The above two cases of catastrophic neurological complications are speculated to be related to the complications of triamcinolone acetonide. Triamcinolone acetonide is a suspension, insoluble in water, with a large number of particles gathering, and the largest particle is greater than 500μm. It has been reported that the medium-sized particles of adrenocortical hormone with a diameter of 51-1000μm can easily block the blood vessels, especially the anterior spinal artery [8,9]. Although intratympanic injection of triamcinolone acetonide can be used to treat hearing impairment, severe hearing impairment caused by topical injection into the earlobe is very rare [10]. The serious hearing impairment and paraplegia of lower limbs caused by triamcinolone acetonide in the above two cases are likely to block the capillaries of the inner ear or the blood vessels of the spinal cord with triamcinolone acetonide granules, resulting in serious dysfunction of the inner ear and spinal cord. In addition, the preservative of triamcinolone acetonide contains benzyl alcohol, which may have certain neurotoxicity to the adjuvant itself and cause corresponding neuroinflammatory reaction.

4. CONCLUSION

Therefore, in view of the disastrous consequences of triamcinolone acetonide, we should be alert to its serious neurological complications when using triamcinolone acetonide clinically. Try to avoid using it in some parts with abundant blood supply and important nerve function. During use, it should be closely observed, relevant

complications should be treated as soon as possible, and irreversible nerve complications should be avoided.

CONSENT

As per international standard or university standard, patient(s) written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

FUNDING INFORMATION

This study was funded by Medical research fund of Guangdong Province (No. A2022341) and Scientific research project of Guangdong Administration of Traditional Chinese Medicine (No. 20231323) and Hospital level project of Foshan Second People's Hospital (No.2022A01).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Song H, Tan J, Fu Q, Huang L, Ao M. Comparative efficacy of intralesional triamcinolone acetonide injection during early and static stage of pathological scarring. J Cosmet Dermatol. 2019;18(3): 874-878.
DOI:10.1111/jocd.12690
2. Van Boxem K, Rijsdijk M, Hans G, et al. Safe Use of Epidural Corticosteroid Injections: Recommendations of the WIP Benelux Work Group. Pain Pract. 2019; 19(1):61-92.
DOI:10.1111/papr.12709
3. Yin Q, Niessen FB, Gibbs S, et al. Intralesional corticosteroid administration in the treatment of keloids A survey among Dutch dermatologists and plastic surgeons. J Dermatolog Treat. 2023;1-11.
DOI:10.1080/09546634.2022.2159308
4. Mimura M, Matsuura T, Takagi M, et al. A randomized clinical trial of triamcinolone acetonide injection for suppression of inflammation after blepharoptosis surgery. J Plast Reconstr Aesthet Surg. 2022;75(5):1744-1749.
DOI:10.1016/j.bjps.2021.11.084
5. Artzi O, Koren A, Niv R, Mehrabi JN, Friedman O. The Scar Bane, Without the Pain: A New Approach in the Treatment of Elevated Scars: Thermomechanical Delivery of Topical Triamcinolone Acetonide and 5-Fluorouracil. Dermatol Ther (Heidelb). 2019;9(2):321-326.
DOI:10.1007/s13555-019-0298-x.
6. Ferrao Blanco MN, Bastiaansen Jenniskens YM, Kops N, et al. Intra-articular injection of triamcinolone acetonide sustains macrophage levels and aggravates osteophytosis during degenerative joint disease in mice. Br J Pharmacol. 2022;179(11):2771-2784.
DOI:10.1111/bph.15780
7. Kuek DKC, Chung SL, Zishan US, et al. Conus infarction after non-guided transcoccygeal ganglion impar block using particulate steroid for chronic coccydynia. Spinal Cord Ser Cases. 2019;5:92. Published; 2019.
DOI:10.1038/s41394-019-0237-1
8. Dietrich TJ, Sutter R, Froehlich JM, Pfirrmann CW. Particulate versus non-particulate steroids for lumbar transforaminal or interlaminar epidural steroid injections: an update. Skeletal Radiol. 2015;44(2):149-155.
DOI:10.1007/s00256-014-2048-6
9. Mehta P, Syrop I, Singh JR, Kirschner J. Systematic Review of the Efficacy of Particulate versus Nonparticulate Corticosteroids in Epidural Injections. PM R. 2017;9(5):502-512.
DOI:10.1016/j.pmrj.2016.11.008
10. Dahm V, Nieratschker M, Riss D, et al. Intratympanic Triamcinolone Acetonide as Treatment Option for Idiopathic Sudden Sensorineural Hearing Loss. Otol Neurotol. 2019;40(6):720-727.
DOI:10.1097/MAO.0000000000002283

Peer-review history:
The peer review history for this paper can be accessed here:
https://www.sdiarticle5.com/review-history/95220