



衛生署
Department of Health

Poisoning Watch

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Am I taking corticosteroids?



Introduction

Corticosteroids are hormones produced in the adrenal gland. They include aldosterone which helps regulate salt concentration in the body and cortisol which has multiple roles including having an effect on the body's stress response system, and can reduce inflammation. Corticosteroids are also produced artificially and used as drugs to suppress allergic reactions and inflammatory response thereby reducing signs and symptoms of swelling, redness and itchiness. Various inflammatory response and immune system-related diseases are treated with corticosteroids. These medical conditions include asthma, eczema, rheumatoid arthritis, inflammatory bowel disease and systemic lupus erythematosus, etc. In general, corticosteroids are safe and useful in management of some diseases under doctor's prescription, instruction and supervision. However, if corticosteroids are used without medical supervision, especially in the long term or at high dose, they can cause potentially serious side effects including Cushing's syndrome or adrenal insufficiency.

Commonly prescribed oral corticosteroid medications include prednisone, prednisolone and dexamethasone. In Hong Kong, oral corticosteroids are only available on prescription. Healthcare professionals would prescribe corticosteroids after balancing their benefits and risks.



衛生防護中心
Centre for Health Protection



Local situation

In Hong Kong, products containing corticosteroids are implicated in a large number of western medicine-related poisoning case notifications received by the Department of Health (DH) each year. These are products administered orally or topically, and majority of them were found to contain undeclared corticosteroids.

From 2015 to 2018 (as of 30 June 2018), DH recorded a total of 379 poisoning case notifications related to western medicine, including all routes of administration, and 122 (32.2%) were related to corticosteroid-containing oral or topical products. The mean (median) age of affected individuals was 59 (61) years old with a range from 0 to 91 years old and there was no obvious gender predilection (49.2% female).

DH carried out epidemiological investigation in response to each notification which showed that among the corticosteroid-containing products, 60 (49.2%) were purchased by affected individuals from pharmacy, internet and shop without doctor's prescription; 45 (36.9%) were obtained from friends or relatives and 17 (13.9%) were from other or unknown sources (Figure 1). According to the investigation result of each notification, public health control measures including enforcement actions, enhanced market surveillance and health risk communications in the form of health advice to affected individuals, press release targeting the wider population, etc. would be performed where appropriate.

**Source of corticosteroid-containing products involved in poisoning case notifications, 2015-2018
(as of 30 June 2018) (n=122)**

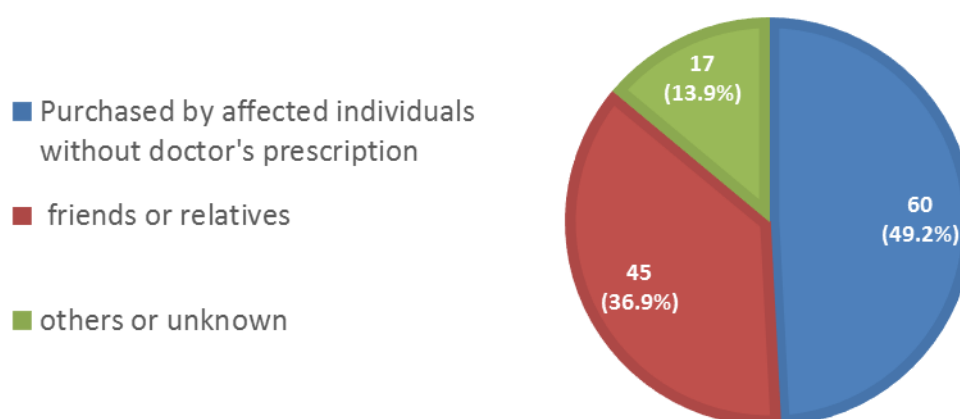


Figure 1: Source of corticosteroid-containing products involved in poisoning case notifications from 2015 to 2018 (as of 30 June 2018)



111 (91.0%) of all poisoning case notifications related to corticosteroids were associated with products taken by the oral route. Among the 111 notifications, investigations showed that clinical features typical of corticosteroid overuse or misuse were found in 74 notifications. Among the 74 notifications, 39 (52.7%) presented with Cushingoid features e.g. moon face, weight gain, stretch marks over body etc., 14 (18.9%) with adrenal insufficiency, five (6.8%) with liver derangement, five (6.8%) with gastrointestinal symptoms, four (5.4%) with infection, and three (4.0%) with electrolyte disturbances (Figure 2). Among the 74 notifications, 56 (75.7%) required hospitalization including four (5.4%) admitted to intensive care unit.

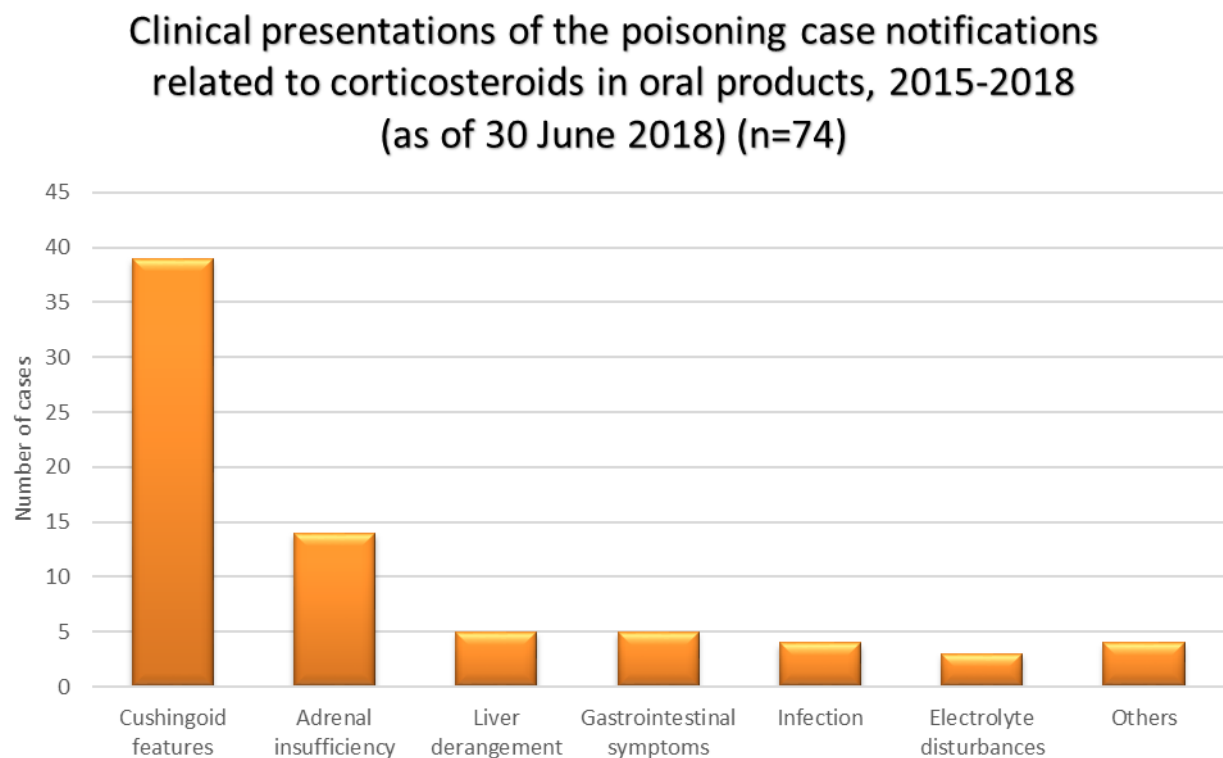


Figure 2: Clinical presentations of the poisoning case notifications related to corticosteroids in oral products from 2015 to 2018 (as of 30 June 2018)

The clinical presentations are actually well-known side effects of corticosteroids. These side effects are multiple and potentially serious with long term or irreversible health sequelae requiring long term management.



Unfortunately, a variety of oral products exists in the market claiming to produce health benefits e.g. for pain relief or improving airway problems. These products were often, without prescription from doctors, self-purchased by individuals from pharmacies, shops and the internet; or recommended or given by friends or relatives. In some instances, laboratory analyses of these oral products showed that they were adulterated with undeclared corticosteroids.

Example of oral product found to contain undeclared corticosteroid

Press Release:

[https://www.info.gov.hk/gia/
general/201703/23/P2017032300550.htm](https://www.info.gov.hk/gia/general/201703/23/P2017032300550.htm)

Figure 3: Example of oral product found to contain undeclared corticosteroid

As a result of prolonged use of corticosteroid constituents and in the absence of doctors' supervision and monitoring of the disease progression and its response to treatment, serious and sometimes life-threatening side effects occur. These may include:

- ◆ Symptoms of Cushing's syndrome (Cushingoid features) e.g. fatty deposits in the face (moon face), or back of the neck (buffalo hump), truncal obesity, stretch marks across the body, easy bruising and, acne, etc.



Figure 4: Cushingoid features - buffalo hump
(Fat accumulation at back of the neck)
(Photograph courtesy of PWHPTC)



- ◆ Adrenal Insufficiency e.g. fatigue, muscle weakness, poor appetite and, abdominal pain, etc.
- ◆ Liver damage and/or worsening of underlying liver diseases e.g. flare-up of chronic hepatitis infection
- ◆ Gastrointestinal disturbances
- ◆ Electrolyte disturbances
- ◆ Increased risk of infection
- ◆ Others e.g. mental disturbances, osteoporosis, poor diabetes and hypertension control , etc.



Figure 5: Cushingoid features - easy bruising
(Photograph courtesy of PWHPTC)

It is also important to note that abrupt withdrawal after consuming corticosteroids for a prolonged period may lead to serious or even fatal complications due to acute adrenal insufficiency. In general, doctors will gradually reduce the dose based on the clinical condition and patients should always follow the instruction from healthcare professionals when they are to stop after prolonged use of corticosteroids.

Prevention Tips

Despite their potential side effects, corticosteroids remain important and useful in clinical management of a large number of medical conditions. Prevention of corticosteroid-related poisoning begins with awareness and understanding about its proper usage, potential side effects, full compliance with medical advice, close monitoring of disease condition and response to treatment, avoidance of self-medication, and measures to reduce inadvertent exposure in everyday life.





Practical tips:

- ◆ Don't buy, use, recommend or share products of unknown or doubtful composition, or from unknown sources, even if they are given by a friend or relative.
- ◆ Don't use the old prescription of corticosteroids to obtain additional supply from drug stores without consulting healthcare professionals again.
- ◆ Consult qualified healthcare professionals on chronic illnesses for appropriate advice and holistic management and refrain from self-medication, especially in the long term, without professional supervision.
- ◆ Seek advice from healthcare professionals if in doubt or feel unwell after consumption of oral products.
- ◆ You may wish to refer to the "Products found to contain undeclared medicines" of the Drug Office website for more information at https://www.drugoffice.gov.hk/eps/do/en/consumer/safety_alerts_and_medical_recalls/undeclared_medicines.html.

References

1. Drug Office, Department of Health, HKSAR. Information on oral corticosteroids. Available at https://www.drugoffice.gov.hk/eps/do/en/consumer/news_informations/dm_02.html
2. Merih Oray, Khawla AbuSamra, Nazanin Ebrahimiadib, Halea Meese & C. Stephen Foster (2016): Long-term side effects of glucocorticoids, Expert Opinion on Drug Safety, DOI: 10.1517/14740338.2016.1140743
3. Price, D. B., Trudo, F., Voorham, J., Xu, X., Kerkhof, M., Ling Zhi Jie, J., & Tran, T. N. (2018). Adverse outcomes from initiation of systemic corticosteroids for asthma: long-term observational study. Journal of asthma and allergy, 11, 193-204. DOI:10.2147/JAA.S176026

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