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Editorial

Flushing Associated with Prolonged Mask Wearing During Covid-19 Pandemic among the General Population

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Abstract

Wearing mask was encouraged to prevent dispersal of droplets and to reduce the risks of environmental contamination by COVID-19 during COVID-19 pandemic. However, we noticed a rise in the initial attack, relapse or exacerbation of flushing among general population due to long-time mask wearing. In this manuscript, we reported the characters of the mask-related flushing, and attempted to explain the reasons and put forward some precautions for that. We suggested that general public should be aware of proper and rational mask wearing to avoid inducing and aggravating flushing. We hope that our findings will contribute to increase the awareness about mask related flushing.

Key words: flushing; mask wearing; covid-19; skin barrier

Introduction

To Editor

Wearing mask was encouraged to prevent dispersal of droplets during talking, sneezing, and coughing, and to reduce the risks of environmental contamination by COVID-19 based on the precautionary principles. However, wearing mask for a long time increased flushing due to higher temperature. We aim to report these rising cases of flushing among the general population.

From 15th April 2021 till 15th May 2021, we diagnosed 22 patients (7 males and 15 females) of facial flushing who were not involved in any healthcare-associated occupations. The diagnosis was based on visible skin redness accompanied by warmth sensation excluding idiopathic anaphylaxis, carcinoid syndrome, mastocytosis, pheochromocytoma, medullary thyroid carcinoma, pancreatic cell tumor, renal cell carcinoma, and neurologic flushing. Eleven patients with a history of rosacea relapsed or exhibited aggravated flushing. The other eleven patients with or without a history of acne presented the initial attack of flushing. All patients admitted have worn masks for over 2 hours per day more than 1 month and denied alcohol-, drug-, pregnancy-, or emotion-related and climacteric flushing. Flushing is not only limited to the area covered by the masks but also to the glabellum and the forehead, which is different from allergic or irritant contact dermatitis. The most common symptoms reported were drying, itching, tingling, and burning sensation besides warmth. Signs and symptoms improved after removing the mask for 30 minutes in those cases without any history and for longer than 3 hours in those patients with acne, while persistent facial redness with or without telangiectases existed until effective treatments were taken in those patients with rosacea.

Flushing reactions could be resulting from the direct action of vasodilator agents and those mediated by autonomic nerves. The most common autonomic neural-mediated flushing reactions are the thermoregulatory flushing reactions [1]. Wearing a mask creates a closed space on the surface of facial skin, where local temperature significantly increased. Patients who are sensitive to the varieties of hyperthermia are most likely to develop episodic flushing attacks, and repetitive episodes over long periods may result in a constant facial erythema with telangiectases. Moreover, humid environments caused by water in exhaled air may cause skin barrier damage and lead to subsequent skin dryness and itch.

Patients might touch their faces after removing the masks due to itch and drying, which increases the risks of COVID-19 transmission through respiratory route [2]. Mehak also suggested skin barrier dysfunction might create a route of entry for COVID-19, because angiotensin-converting enzyme 2 - which acts as the cell receptors for COVID-19, are presented abundantly in the basal layer of the epidermis, capillaries of the skin and eccrine glands [3].

A cold gel pack around the neck and forehead, or a cooling fan blowing directly on the face might relieve the flushing. Holding ice chips in the mouth without chewing or swallowing is also recommended, it helps to

achieve maximum cooling effectiveness. Chilling oral cavity reduces the temperature at the anterior, it increases the hypothalamic threshold and stimulates oropharyngeal receptors leading to the physiologic reaction of vasoconstriction [4]. Hot beverages and food should be avoided or followed with a cooling drink to relieve oral thermal-induced flushing. Control the time of wearing a mask and put two layers of tissue or gauze inside the mask to reduce humidity [5]. Clean face with cold water and weak acidic or neutral foamless cleansing products. Applying emollients containing hyaluronic acid, ceramide, vitamin E or other repairing ingredients are recommended before donning and after doffing masks to reduce the sustained damage of skin barrier [6]. By employing these nonpharmacologic maneuvers, the condition of mask-related flushing might be relieved. Topical brimondine, oral tetracyclines, intense pulse light and pulse dye laser were usually administrated for those patients with constant flushing.

	Age/Gender	Past History	Initial Attack /Relapse /Relapse	Symptoms	Signs	Time of ask wearing	Time of signs Disappeared after removing the mask
1	27/F	Rosacea	Relapse	Itching and drying	Redness on the cheek	10 hrs. per day for two months	Persistent redness
2	22/F	Acne	Initial Attack	Tingling	Redness on the cheek	6 hrs. per day for two months	3 hrs.
3	21/M	Acne	Initial Attack	Drying	Redness on the cheek, nose, forehead, glabellum and perioral area	1 hr. per day for one month	4 hrs.
4	34/F	Acne	Initial Attack	Itching and drying	Redness on the cheek, nose, forehead, glabellum and perioral area	12 hrs. per day for one month	3 hrs.
5	22/M	No	Initial Attack	Itching and drying	Redness on the cheek, nose, perioral and periorbital area	2 hrs. per day for two months	Half an hour
6	25/F	Rosacea	Relapse	Burning and drying	Redness on the cheek, nose, forehead, and periorbital area	1 hr. per day for one month	Persistent redness
7	33/F	Rosacea	Aggravate	Drying	Redness on the cheek, nose, forehead, and glabellum	8 hrs. per day for two months	Persistent redness
8	24/F	Acne	Initial Attack	Drying	Redness on the cheek	3 hrs. per day for one month	4 hrs.
9	10/M	No	Initial Attack	Drying	Redness on the cheek	1 hr. per day for one month	Half an hour
10	27/M	Acne	Initial Attack	Itching and drying	Redness on the cheek and nose	12 hrs. per day for two months	3 hrs.
11	23/F	No	Initial Attack	Itching and drying	Redness on the cheek and nose	1 hr. per day for two months	Half an hour
12	27/F	Rosacea	Relapse	Itching, burning and drying	Redness on the cheek, nose, and periorbital area	4 hrs. per day for two months	Persistent redness
13	27/M	No	Initial Attack	Tingling	Redness on the cheek, nose, forehead and periorbital area	12 hrs per day for two months	Half an hour
14	35/F	Rosacea	Relapse	Itching	Redness on the cheek, nose, perioral and periorbital area	2 hrs. per day for two months	Persistent rednes
15	28/F	No	Initial Attack	Itching and drying	Redness on the cheek and forehead	8 hrs. per day for three months	Half an hour
16	25/F	Rosacea	Aggravate	Tingling	Redness on the cheek, nose, forehead, perioral and periorbital area	1 hr. per day for two months	Persistent redness
17	23/F	Rosacea	Relapse	Drying and tingling	Redness on the cheek, nose, forehead and periorbital area	4 hrs. per day for two months	Persistent redness
18	20/M	Acne	Initial Attack	Drying	Redness on the cheek, nose	2 hrs. per day for two months	4 hrs.
19	23/F	Rosacea	Aggravate	Drying	Redness on the cheek, nose, forehead and glabellum	5 hrs. per day for one month	Persistent redness
20	28/F	Rosacea	Relapse	Burning	Redness on the cheek, nose, forehead, glabellum and periorbital area	6 hrs. Per day for two months	Persistent redness
21	23/M	Rosacea	Aggravate	Tingling	Redness on the cheek, nose	8 hrs. Per day for two months	Persistent redness
22	20/F	Rosacea	Aggravate	Drying	Redness on the cheek, nose, forehead, perioral and periorbital area	4hrs. Per day for twomonths	Persistent redness

Table 1: Patients' demographic and clinical characters

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Reference

1. Azeen S, Hailey R, Brittany O, Erin B. (2017). Etiologies and management of cutaneous flushing: Nonmalignant causes. J Am Acad Dermatol. 77(3):391-402
2. Gupta MK, Lipner SR. (2020). Personal Protective Equipment Recommendations Based on COVID-19 Route of Transmission. J Am Acad Dermatol. S0190-9622(20); 30683-30686.
3. Mehak S , Manoj P, Atul B , Nishant C. Overzealous hand hygiene during COVID 19 pandemic causing increased incidence of hand eczema among general population. (2020). J Am Acad Dermatol. S0190-9622(20); 30660-30665.
4. Wilkin JK. (1993). The Red Face: Flushing Disorders. Clin Dermatol. 11(2):211-223
5. Yu N, Wu L, Su J, Huang K, Zhao S, Chen X. (2020). One more paper towel, longer protection. J Am Acad Dermatol. 82(6):189-190.
6. E Kownatzki. Hand hygiene and skin health. J Hosp Infect. 55:239-245.

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