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Intranasal corticosteroids in allergic rhinitis in COVID-19 infected patients: An ARIA-EAACI statement

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A novel strain of human coronaviruses, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), named by the International Committee on Taxonomy of Viruses (ICTV) (1), has emerged and caused an infectious disease recently referred to as "coronavirus disease 2019" (COVID-19) by the World Health Organization (WHO). Since the first report of this disease in December 2019 in Wuhan, China (2, 3), COVID-19 has aggressively spread across the globe. WHO declared it a pandemic on March 11.

COVID-19 presents with many different clinical manifestations, ranging from asymptomatic cases to mild and severe disease, with or without pneumonia (4). Patients with common allergic conditions do not develop additional distinct symptoms and do not seem to be at an increased risk of severe disease. Allergic children show a mild course, like the rest of the children (5). COVID-19 cases with pre-existing COPD, or complicated by secondary bacterial pneumonia, are more severe and this may be due to a complex immune pathogenesis.

Whether systemic corticosteroids have a deleterious effect on COVID-19 infection is still a matter of discussion. Clinical evidence does not support corticosteroid treatment for SARS-CoV-2 pneumonia (6). Moreover, corticosteroid therapy in patients with MERS (Middle East Respiratory Syndrome) was not associated with a difference in mortality after adjustment for time-varying confounders but was associated with delayed MERS coronavirus RNA clearance (7). In accordance with current WHO guidance (8), it has been proposed that corticosteroids should not be used for SARS-CoV-2 -induced lung injury or shock, except in the setting of a clinical trial. However, a team of front-line physicians from China had a different perspective (9). Given the inconclusive evidence and urgent clinical demand, physicians from the Chinese Thoracic Society have developed an expert consensus statement on the use of corticosteroids in SARS-CoV-2 pneumonia that may allow the restricted use of low doses of corticosteroids for a short duration (10).

Concerning inhaled corticosteroids in asthma, the Global INitiative for Asthma (GINA) recently stated the following (https://ginasthma.org/recommendations-for-inhaled-asthma-controller-medications/): "Some sources have suggested that "corticosteroids" should be avoided during the for SARS-CoV-2 epidemic. This advice is about the use of oral corticosteroids unless there is a clear indication for their use. However, **patients with asthma should not stop their prescribed inhaled corticosteroid controller medication (or prescribed oral corticosteroids)**. Stopping inhaled corticosteroids often leads to potentially dangerous worsening of asthma, and avoiding oral corticosteroids during severe asthma attacks may have serious consequences. Long-term oral corticosteroids may sometimes be required to treat severe asthma, and it may be dangerous to stop them suddenly. Always discuss with your doctor or nurse before stopping **any** asthma medication. **Keep taking your inhaled asthma controller medication, and if your**

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asthma gets worse, follow the instructions on your asthma action plan for how to change your asthma medications and when to seek medical help."

Some scientific societies have made recommendations for anosmia and have proposed the use of intra-nasal corticosteroids. However, the French Agency (Direction Générale de la Santé) has contra-indicated their use in anosmia and aguesia without nasal obstruction (11). They have extended the contra-indication to saline washing since these could promote viral dissemination.

ARIA and EAACI have followed the example of the Dutch ENT Society and sent a questionnaire to all ARIA members regarding recommendations for allergic rhinitis and anosmia. ARIA and EAACI are proposing a joint statement following the results of the questionnaire.

Anectodal evidence

In the Wuhan Children's hospital, there were about 40 paediatric COVID-19 cases with AR. Among these cases, approximately one third used intranasal steroids regularly as before, the other two thirds did not. It was observed in these two patient groups that there was no difference in the severity and prognosis of COVID-19, and that all of them recovered well. (Personal communication Yadong Gao and Hui Du, Unpublished data).

Questionnaire

A Delphi process was initiated by Anna Bedbrook who sent the 3 questions proposed by the Dutch ENT Society to the entire ARIA database (509 members, 84 countries), asking members to agree, somewhat disagree or completely disagree. After 48 hours, 209 replies were received from 61 countries (Table 1 and Figure 1).

Q3 led to too many unanswered comments and could not be considered. Moreover, the scientific basis for this recommendation is lacking.

Figure 1: List of countries

Recommendations

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With the current knowledge, in patients with COVID-19 infection, intra-nasal corticosteroid (including spray) can be continued in allergic rhinitis at the recommended dose
Stopping local intra-nasal corticosteroid is not advised. Suppression of the immune system has not been proven and more sneezing after stopping means more spreading of the Corona virus
These recommendations are conditional since there is a paucity of data and they should be revised regularly with new knowledge

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Table 1: Results of the questionnaire

Q		Agree	Somewhat disagree	Completely disagree	No answer
1	Currently, nasal corticosteroid spray can be continued in the hay fever season	175 (91.6%)	4 (2.2%)	3 (1.5%)	9 (4.7%)
2	Stopping local nasal corticoid spray is not advised: suppression of the immune system has not been proven and more sneezing after stopping means more spreading of the Corona virus	173 (90.6%)	4 (2.2%)	3 (1.5%)	11 (5.8%)
3	Prescribing local nasal spray against anosmia due to Corona infection does not make sense	100 (51.6%)	3 (1.5%)	0	88 (47.5%)

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Figure 1: List of countries with at least one answer to the questionnaire

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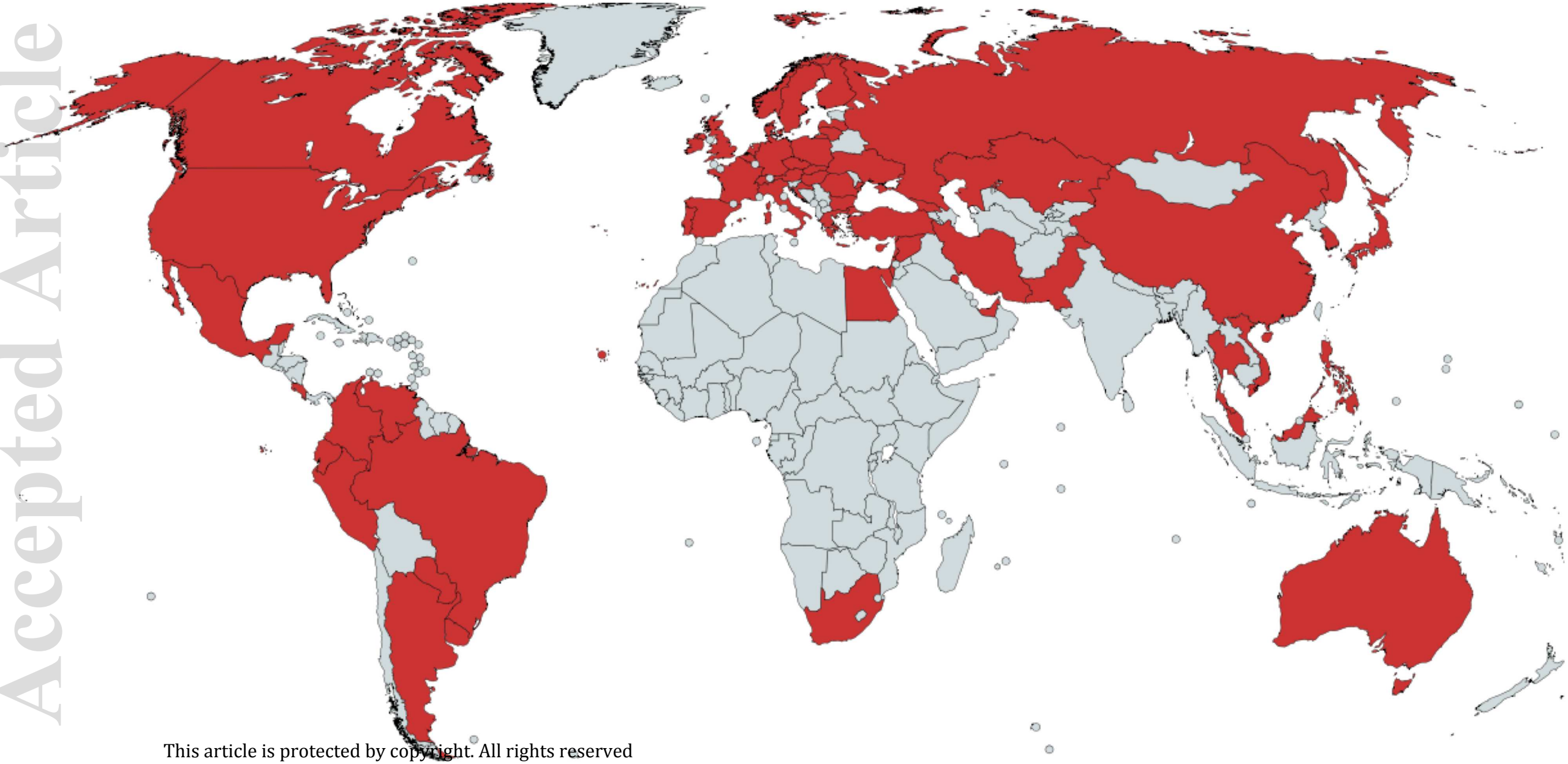

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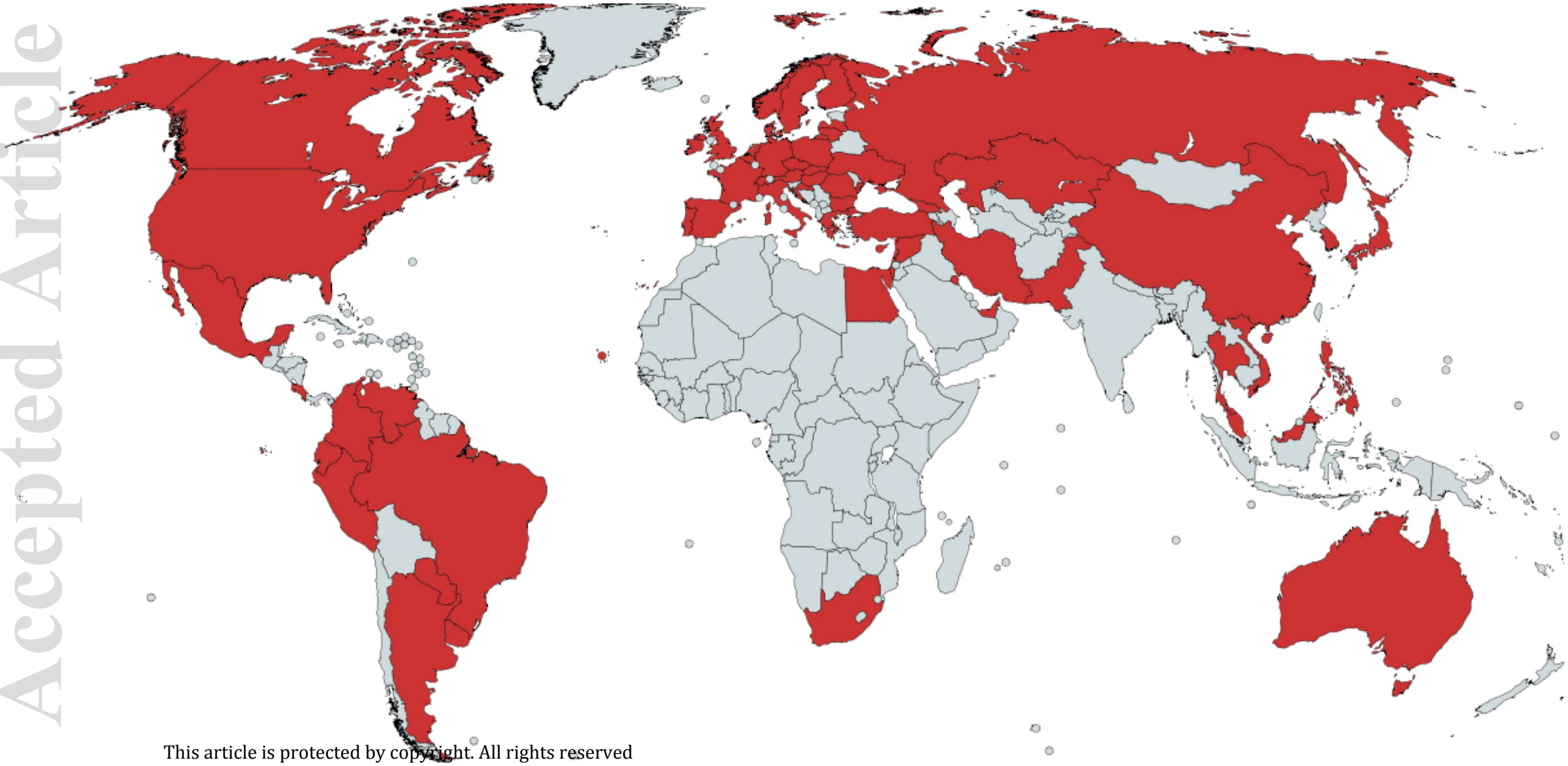

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