

REVIEW

Digital health in the management of allergic diseases

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Abstract. In recent years there has been an important implementation in the medical field of both Mobile Health, such as the use of mobile communication devices, and of other telemedicine tools in general, with the aim of supporting the supervision of diseases from the moment of the first diagnosis to the therapeutic follow-up. In fact, Digital Health can also have a very positive impact on the management of allergic patients, who are known to have the greatest need for regular monitoring, simplifying contact between doctor and patient, but there is still a need to improve implementation regulations, define certification programs and adequate reimbursement systems, as well as to guarantee a high level of attention to the protection of sensitive data. The hope is that one positive outcome of the Covid-19 pandemic will be an acceleration, by all stakeholders involved, of the process of the modernization of health care. (www.actabiomedica.it)

Key words: Telemedicine, Apps, COVID-19, Immune-allergic patients

In recent years there has been an important implementation in the medical field of both mobile health, which is understood as the supply of health services and information through mobile technologies (mobile phones, tablets and personal digital assistants), and other telemedicine tools in general (combination of medical and computer techniques that allow the treatment of a patient remotely), with the aim of supporting the supervision of diseases from the moment of the first diagnosis to the therapeutic follow-up, therefore improving at the same time the possibility of "self-management" by patients, to obtain a general increase in the quality of care.

In fact, digital health can also have a very positive impact on the management of allergic patients, simplifying contact between doctor and patient, but there is still a need to improve implementation regulations, define certification programs and adequate reimbursement systems, as well as to guarantee a high level of attention to the protection of sensitive data.

All this was already clearly underlined in some recently published guidance documents, both in a general context (World Health Organization (WHO) and specifically in the immune-allergic one European Academy of Allergy Clinical Immunology (EAACI) (1). In any case, the infection caused by severe acute

respiratory syndrome coronavirus 2 (SARS-CoV-2), declared a pandemic from WHO on March 11th 2020, has had a devastating effect in that sense, first in Asia and later in the Western world. In China, especially, much of the infection has been linked to intra-hospital transmission: this underlined the need to limit the movement of patients unless absolutely necessary, to reduce the possibility of contagion. In this context, therefore, telemedicine (“arriving” at the patient’s home without putting them at risk) makes it possible to treat patients with mild-moderate symptoms directly at home (2).

In this regard, during the first wave of Spring 2020, the same Italian scientific organizations operating in the immune-allergic area published handbooks to guide patients in the “differential self-diagnosis” between symptoms of Covid-19 infection and those of typical respiratory allergies, as well as in the “remote” management of both immune-allergic clinical manifestations and chronic therapies (such as allergen immunotherapy and biological drugs). Similarly, the pediatric section of EAACI formulated some recommendations for the management of childhood allergies and immunodeficiencies in this particular situation: do not interrupt continuous therapies for the optimal control of chronic forms such as severe asthma and immunodeficiencies (considered risk factors for complications from Covid-19) and prioritize digital doctor-patient communication whenever possible (telemedicine) (3). The Committee for New Digital Technologies (NTD Committee) of the Italian Society of Pediatric Allergy and Immunology (SIAIP) also gave some indications:

- Allergic patients can regularly monitor the trend of pollen counts by consulting pollen bulletins online.
- It is recommended to use digital applications to automatically monitor and communicate your own symptoms to the referring physician.
- In this specific situation, managing communication with your own doctor through common digital messaging applications can also be particularly useful.

From a more strictly practical point of view, some authors from the USA and Canada have indicated criteria for the reorganization of allergy and immunology outpatient services during a pandemic: most visits should be postponed/delayed or managed through

virtual contacts/consultations, with the exception of patients with primary immunodeficiency or uncontrolled asthma, or patients undergoing allergen immunotherapy, by developing and integrating telemedicine tools where possible, in order to set aside the few places available for the traditional outpatient visit to the most serious patients, according to the clinician’s judgement (4).

Therefore, based on the evidence of efficacy regarding the limited use of telemedicine in the first pandemic wave, various working groups, also in the immune-allergic field, subsequently developed models for its “definitive” implementation in the various health systems, both with regard to practical and regulatory aspects (5, 6). In these works it was emphasized how the sudden need to use Digital Health tools during a pandemic had determined an objective acceleration in the transformation of assistance systems in a technological sense, with the need both to adapt working methods in daily practice and to select through “screening criteria” the types of clinical activities and patients most suitable for assistance in telemedicine.

In this regard, the advent of the Covid-19 pandemic has evidently amplified the differences between various countries, from the point of view of the propensity to use technological solutions in the health sector. As for Italy, up to now the scarcity and heterogeneity of the available instrumentation, the lack of interconnection between the various telemedicine systems and the electronic medical record of the national health system, the absence of economic reimbursement and the presence of heavy regulatory restrictions on privacy have hindered the implementation of effective digital solutions, especially for the management of chronic patients, such as immune-allergic patients, who are known to have the greatest need for regular monitoring (7). The new Guidelines issued by the Ministry of Health and approved by the State Regions Conference in December 2020 represent a turning point for the entry of telemedicine into the National Health Service (SSN). The document provides guidelines to be adopted at the national level for the provision of some telemedicine services; in practice, they will be priced, accounted for and, where applicable, subject to a monetary charge. Health care services in telemedicine, such as televisit (doctor-patient interaction) and medical

teleconsultation (interaction between doctors), will officially become recognized health services.

However, for a complete implementation of this “new” patient assistance tool, it will be necessary to guarantee some aspects:

- an effectively functioning physician-patient infrastructure, with particular attention to data management (privacy);
- the possibility of universal access, avoiding inter-regional and intra-regional inequalities, for example by utilizing the network of local pharmacies;
- rigorous and continuous training of operators.

In any case, various surveys have indicated a high degree of satisfaction in the use of telemedicine during the Covid-19 pandemic, both by doctors and patients (by the way, the SIAIP NTD Committee is conducting a survey among Italian doctors) (8); improving the above points will ensure a further increase in satisfaction on both sides in the future.

Finally, the hope is that one positive outcome of this health crisis will be an acceleration, by all stakeholders involved, of the process of the modernization of health care (which is already underway but is still in its infancy), thus contributing to the refinement and full implementation of this method in the post-pandemic future.

Conclusion

Digital health can have a very positive impact on the management of allergic patients, especially in epidemic situations.

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