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SPECIAL ARTICLE

2021 Spanish Society of Hypertension position statement about telemedicine



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Abstract The pandemic caused by coronavirus SARS-CoV-2 (COVID-19) has forced, in many cases, to replace face-to-face consultation with the telematic consultation, in order to reduce the risk of contagion associated with the presence of patients in health centres. This change may represent an opportunity for a different and more effective communication between professionals and patients, allowing better accessibility to medical care and more systematic and comprehensive approach to patients with hypertension and cardiovascular risk. However, organisational tools are needed to facilitate communication between patients and professionals, specifically with the exchange of clinical data by remote monitoring of variables associated with hypertension and cardiovascular risk (blood pressure, weight, height, blood tests...), and allow monitoring of adherence to treatments, lifestyles and risk factors. It would be desirable for this to be carried out by multidisciplinary teams, both from primary care, hospital and community pharmacy, with an adequate coordination of care. This document of the Spanish Society

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of Hypertension (SEH-LELHA) tries to give the keys to improve the quality of care of telematic consultations of patients with hypertension and cardiovascular risk, provide basic criteria of telematic or face to face attention and systematise their content. Likewise, the follow-up criteria are proposed by the different professionals.

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PALABRAS CLAVE

Hipertensión;
Telemedicina;
Teleconsulta

Documento de consenso sobre consulta telemática en hipertensión y riesgo vascular. Sociedad Española de Hipertensión-Liga Española para la Lucha contra la Hipertensión Arterial (SEH-LELHA)

Resumen La pandemia producida por el coronavirus SARS-CoV-2 (COVID-19) ha obligado, en muchos casos a sustituir la consulta presencial por la consulta telemática para reducir el riesgo de contagio asociado a la presencia de pacientes en los centros sanitarios. Este cambio puede representar una oportunidad para una comunicación diferente y más eficiente entre profesionales y pacientes, permitiendo mejorar la accesibilidad a la atención médica y un abordaje más sistemático e integral a los pacientes con hipertensión y riesgo cardiovascular. No obstante, se necesitan herramientas organizativas que faciliten la comunicación entre pacientes y profesionales, específicamente con intercambio de datos clínicos que favorezcan la monitorización remota de las variables asociadas a la hipertensión y riesgo cardiovascular (presión arterial, peso, talla, variables analíticas...) y permitan realizar un seguimiento adecuado en aspectos como la adherencia a los tratamientos, estilos de vida y factores de riesgo. Todo ello sería deseable que fuera realizado por equipos multidisciplinares, tanto de atención primaria como hospitalaria y farmacia comunitaria, con una coordinación adecuada del cuidado en este tipo de pacientes. Este documento de la Sociedad Española de Hipertensión-Liga Española para la Lucha contra la Hipertensión Arterial (SEH-LELHA) trata de dar las claves para mejorar la calidad asistencial de las consultas telemáticas de los pacientes con hipertensión y riesgo cardiovascular, proporcionar criterios básicos de atención telemática o presencial y sistematizar el contenido de estas. Así mismo se plantean los criterios de seguimiento por los diferentes profesionales.

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Introduction

The COVID-19 pandemic has brought about major changes in medical care in order to reduce the risk of contagion of patients and healthcare staff in face-to-face consultations, and telematic consultations have taken centre stage, through simple telephone calls, standard video calls, mobile messages, etc. The advantages of these consultations are that they avoid exposure to infection, patients and professionals do not have to travel, and they can help to adapt care pathways, if conducted in an organised, uniform, and consensual manner between patients, professionals, and the health system. There are also drawbacks, however, such as the lack of specific technical resources for agile communication between professionals and patients, the information that is gained from the patient's non-verbal language is lost, and it is impossible to carry out physical examinations or complementary tests. There is also a lack of training and previous experience in this type of consultation on the part of professionals and patients.

These consultations seek to reproduce the structure and content of usual face-to-face care using the communication channels available to each professional, telephone, email, video calls, etc. However, telemedicine, or e-health, is a

broader concept that covers different communication channels, from information technologies to the development of tools for remote patient care (consultations, medical education, specific health services, remote monitoring of clinical parameters, etc.).¹ The ultimate goal of telemedicine would be to improve patient access to medical care, empower patients to improve their approach and achieve appropriate healthy lifestyle behaviours that can enhance the control of their diseases and overall health status.² However, the evidence that telemedicine improves disease control in patients with multimorbidity is moderate and there is no evidence of any improvement in patients' overall health status.³ Although some studies report that telemedicine has been shown to improve blood pressure (BP) control compared to conventional clinical care,⁴ there is no evidence of its role in everyday clinical practice.⁵ Neither are there specific recommendations on how to incorporate telemedicine in the management of hypertension (HTN). Only the 2017 American College of Cardiology and American Heart Association guidelines suggest that telemedicine strategies could help improve BP control.^{6,7}

An international expert position paper on the use of telemedicine in the monitoring and management of HTN has recently been published, highlighting the importance of care

Table 1 Criteria for selecting the type of consultation.

Preference for face-to-face consultation	Preference for telematic consultation
Suspicion of potentially serious or urgent problems, having to give bad news. Clinical changes, decompensation or worsening of the patient's condition, need for accompanied visit, first visit	Stable clinical situation
Difficulties in communicating with the patient (language, hearing loss, cognitive problems)	No communication difficulties
Physical examination required	Physical examination not expected to be required
Training in self-examination required: <ul style="list-style-type: none"> • Weight • Blood pressure measurement • SMBP 	Has received training on physical self-examination
Short-term complementary tests required: <ul style="list-style-type: none"> • Blood tests • Electrocardiogram • Radiology • Ankle-brachial index • Pulse wave velocity (PWV) • ABPM 	Complementary tests required in the medium to long term (manage requests through administrative channels)
Requires more personalised training in health education or major changes in treatment or treatment titration.	Will not require any immediate changes in treatment
Uncontrolled cardiovascular disease	No cardiovascular disease or in a stable situation
Presence of multiple comorbidities	No significant comorbidities

ABPM: ambulatory blood pressure monitoring; SMBP: self-measured blood pressure monitoring.

based on appropriate patient communication and feedback of patient data with multi-professional teams, highlighting treatment adherence and education on lifestyle.⁸ We found no relevant specific documents on telematic consultation for patients with HTN and cardiovascular risk (CVR).

The aim of this document is to provide guidelines, within telemedicine, to address the specific aspect of telematic consultations related to HTN and CVR in clinical practice, to provide basic criteria for care and to systematise the content of these consultations. It also sets out the criteria for monitoring by the different primary care and hospital professionals.

Criteria for telematic or face-to-face care

The criteria in deciding the consultation modality should be governed by the benefits outweighing the risks, whichever modality is chosen. These criteria should be agreed between healthcare stakeholders (professionals, patients, and the healthcare system) and should include purely technical criteria to prioritise the patient who will benefit most from face-to-face care, the patient's preferences, and the resources available to the healthcare system. It is important to bear in mind that patients with HTN and CVR often have significant associated comorbidities, are older and sometimes frail and this may affect the mode of care.

Table 1 outlines the criteria to consider when choosing the consultation type. This decision should look at whether the patients have criteria of clinical stability, whether potentially serious or urgent problems are suspected, whether there are difficulties in communicating

with the patient, whether physical examination or training in physical self-examination is required, or whether complementary tests are necessary in the short term, if required by the situation. It is also important to consider whether health education tailored to the patient is required, or important changes in treatment are needed that would make face-to-face assessment appropriate. Periodic face-to-face assessment would also be appropriate for patients with non-stable associated cardiovascular disease (CVD) or multiple comorbidities that require closer follow-up. In any case, the administrative procedures following on from these consultations (appointments for tests and results, referrals, interconsultations, etc.) should have clear and uniform pathways that facilitate patient access to them without the need to repeat the efforts of healthcare staff.

Systematics and content of telematic consultation

It is important to remember that telematic consultation complements, but does not replace, face-to-face consultation, and there are a series of recommendations that must be considered to guarantee the efficiency and safety of the consultation. There are three important basic recommendations to follow when implementing teleconsultations. First, acute problems or warning signs, or worsening of chronic problems that may require face-to-face or emergency care need to be detected. Second, it must be ensured that important information reaches the patient and caregiver, either by manually transcribing instructions and recommendations, checking that the message has been understood, or through

Table 2 Recommendations for conducting teleconsultation.*Basic recommendations*

- Rule out potentially serious symptoms and warning signs
- Ensure that information reaches the patient and caregiver
- Ensure continuity of care and patient accessibility

Specific recommendations

- Confirm the identity of the patient/caregiver and review the clinical history before the consultation. Obtain informed consent and check the patient has agreed to the teleconsultation. Even if a caregiver is present, always talk to the patient
- Ensure the confidentiality and security of the computer system communication, to that end it is important to plan and agree the telematic visit beforehand
- Punctuality is important
- The professional must introduce himself/herself by name, and state their professional category and the health centre from which they are making contact. Ask about availability at that time, although the visit must always be arranged
- Ensure that the environment is appropriate (a quiet place, landline, hands-free headset, silence, check that the patient can hear properly)
- Clarify and explain the content of the consultation to moderate expectations and speak in clear and empathetic language
- Even if the consultation is structured, allow the patient and caregiver to speak
- Start with an open-ended question and continue with the specific questions that brought about the teleconsultation and obtain the clinical data supplied by the patient/caregiver
- Review the patient's treatment, adherence, and ability to self-care
- Assess and manage the complementary tests required
- Check whether the information given has been understood. It is advisable to simplify, summarise, stress and repeat. It is advisable to leave written information on the patient's or health centre's computer file, if possible, or provide access to online information, mobile application, for general content
- Plan new contact, assess whether a face-to-face visit is necessary and ensure accessibility if there are warning signs
- Record in the clinical history

information via patient platforms, health folders, etc., or written information should be collected from the health centre, especially for important recommendations such as starting or changing treatment. For general information, if the patient or caregiver is competent in this area, online access to care information on HTN and any co-morbidities that the patient may have can be recommended. Finally, continuity and accessibility of care should be ensured by explaining to the patient the symptoms or warning signs that require consultation, should they occur, giving approximate dates for review and, ideally, appointments for future reviews. In all cases, the security and confidentiality of patient data must be ensured. [Table 2](#) lists general and specific recommendations for teleconsultation in general.

In the context of HTN and CVR, it is particularly important to take a thorough medical history to determine health status and problems associated with BP control or whether there is organ damage associated with HTN, as shown in [Table 3](#). Previous cardiovascular events and CVR factors such as diabetes, dyslipidaemia, smoking, physical exercise, obesity, suspicion of secondary HTN and comorbidities related to HTN are of particular importance in hypertensive patients.⁹ Questions should be asked about sleep quality to screen for possible obstructive sleep apnoea (consider the Epworth scale).¹⁰ We should also ask about any clinical incidents that have occurred since the last review. They should also be asked whether they have visited the emergency department for any reason, if they have been hospitalised for any reason or if they have had a consultation with another doctor that has led to a change in their medication. The remaining

content of the telematic consultation will take place after taking the patient's medical history, as detailed in [Table 4](#).

When assessing treatment, it is especially important to review the medication the patient is taking at the time of the consultation and check their degree of adherence to their treatment and to a healthy lifestyle.^{9,11} It is also advisable to ask about possible side effects of the medication, such as cough, oedema, or bradycardia, taking the drug they are being treated with into account and any potential warning signs.

Self-measured blood pressure (SMBP) is the recommended way for patients to document their BP levels. It has solid evidence as a predictor of mortality and cardiovascular events,^{12–18} detects white coat syndrome and masked HTN^{6,9} in treated and untreated subjects, and has proven useful in improving adherence to antihypertensive drug treatment and, therefore, HTN control rates.^{19–21} SMBP is the mean of all BP readings taken with a validated electronic monitor on a 4-to-7-day schedule discarding the first day (12–24 readings). Measurements should be performed following the accepted recommendations for BP measurement and SMBP.^{22,23} It should be performed in a quiet room after resting for 5 min, with the patient seated, their back and arm supported. Two measurements should be taken at each session, waiting for 1–2 min between measurements. Validated monitors should be used according to current recommendations that comply with international validation standards.^{24,25} SMBP readings are lower compared to BP measured in the surgery, and the diagnostic threshold for HTN is $\geq 135/85$ mmHg (equivalent to BP measured in the

Table 3 Targeted history taking in the patient with hypertension and cardiovascular risk.

Key aspects	Questions to the patient
Clinical situation	How have you been feeling recently? Have you noticed any changes in your health? Are you pregnant? (only if applicable) Do you sleep well at night? Do you feel sleepy during the day? Do you have problems with impotence? (only if applicable) Do you suffer from urinary incontinence? Any additional symptoms?
Lifestyle	Do you smoke? Do you drink alcohol, and how much? Do you use any drugs and/or toxic substances? Do you follow your diet? Do you add salt to your food? Do you take physical exercise? Have you gained or lost weight?
Neurological symptoms	Have you noticed a headache? Have you experience dizziness? Have you felt light-headed or experienced fainting? Have you noticed any changes in vision? Have you lost strength or sensation in any part of your body? Have you noticed loss of memory or mental faculties?
Cardiological symptoms	Have you experienced chest pain? Have you noticed palpitations? Have you noticed choking sensation, breathlessness or that you get more tired than usual? How many pillows do you use to sleep? Do you have swollen ankles? Have you gained weight in the last few days?
Renal symptoms	Are you more thirsty than usual? Do you pass more urine than usual? Do you get up at night to urinate? Is your urine normal in colour? Is your urine foamy?
Peripheral vascular symptoms	Do your feet feel colder? Do your calves ache when walking? If so, after how many metres do they start to ache? Do they ache at rest?

surgery $\geq 140/90$ mmHg).⁹ Ambulatory BP monitoring (ABPM) will be appropriate in cases where diagnostic confirmation is required, if there are discrepancies or great variability in BP readings, if warning effect and masked hypertension need to be confirmed, for nocturnal BP assessment, for the study of high-risk HTN due to organ damage or associated CVD, if there is suspicion of abnormal BP patterns, for patients with symptoms of hypotension with antihypertensive treatment, resistant HTN, and to assess HTN in children and pregnant women, if the circumstances of the pandemic allow, based on the current consensus and recommendations, and this would have to be face-to-face.^{26,27} In any case, the risk/benefit of measuring BP outside the consultation room either by ABPM or SMBP will be assessed, depending on the indication.

When the data from self-measurement and complementary tests are known, global CVR should be calculated according to the ESC/ESH 2018 guidelines that recommend

the SCORE (Systematic Coronary Risk Evaluation) system [<https://www.escardio.org/Education/Practice-Tools/CVD-prevention-toolbox/SCORE-Risk-Charts>], which estimates the risk of cardiovascular death in 10 years using only age, sex, the presence or absence of smoking, systolic BP and cholesterol levels as variables.²⁸ The advantages of SCORE are that it was developed in a European population, there are adaptations to different geographical areas with different risks (Spain is considered a low-risk area), it is easy to apply and it has usually been adapted in primary care clinical history systems. Its main disadvantage is that it only estimates the risk of mortality from cardiovascular events, and not the risk of non-fatal events, the former being influenced by healthcare quality. The ESC/ESH guidelines themselves acknowledge this limitation and indicate that the risk of non-fatal events could correspond to the risk of cardiovascular mortality multiplied by 3 in men and by 4 in women. The risk estimated by SCORE is categorised as

Table 4 Conducting the telematic consultation on hypertension and cardiovascular risk.

Lifestyle assessment and specific clinical history taking (see [Table 3](#))
 Review of pharmacological treatment, adverse effects and adherence to treatment and healthy lifestyle
 Indirect physical examination with data provided by the patient (weight, height, BMI, waist circumference, SMBP)
 Assessment of complementary tests and determination or follow-up of organ damage (basic blood tests with blood count, biochemistry, microalbuminuria, electrocardiogram)
 Calculation of cardiovascular risk according to SCORE or other national tables if they have been appropriately calibrated and validated
 Structured education on healthy habits (Mediterranean diet, maintenance of healthy weight, low salt intake <5 g/day, low fat intake, individualised prescription of physical exercise according to the patient's situation and smoking cessation if applicable)
 General care plan and changes in pharmacological treatment, assessing whether the patient has understood the changes and whether they need written information and how to access it
 Agree the next visit, point out warning signs in case the patient needs to get in touch earlier and ensure accessibility of the next visit
 Consider whether the patient will need the next consultation to be face-to-face due to the presence of cardiovascular disease, major comorbidities or for a physical examination, ABPM, electrocardiogram, ankle-brachial index, specific training on lifestyle and SMBP

ABPM: ambulatory blood pressure monitoring; BMI: body mass index; SCORE: Systematic Coronary Risk Evaluation. SMBP: self-measured blood pressure monitoring.

Table 5 Treatment adherence and healthy lifestyle.*Treatment adherence*

- Personalised interview or self-questionnaire, Haynes–Sackett, or Morisky–Green test
 - Check removal of drug dispensing in the electronic prescription modules

Lifestyle recommendations

- Physical activity. Take exercise regularly, either 150–300 min/week of moderate aerobic activity or at least 75–150 min/week of vigorous activity or a combination of both. Combine aerobic and resistance exercise of all muscle groups at least two days a week
 - Weight. Stabilise or reduce in subjects who are obese (BMI > 30 kg/m²) or overweight (BMI > 25 kg/m²). Maintain BMI between 20 and 25 kg/m². Increase consumption of vegetables, fresh fruits, fish, nuts, and unsaturated fatty acids (olive oil), low consumption of red meat and consumption of low-fat dairy products is advised
 - Salt intake to be restricted to <5 g/day and alcohol consumption to 14 units/week in males and 8 units/week in females
 - Smoking. Compulsory cessation
 - Blood pressure
 - Target SBP in those under 65 years of age: 120–129 mmHg, if tolerated. DBP: 70–79 mmHg
 - Target SBP in those over 65 years of age: 130–139 mmHg, if tolerated. DBP: 70–79 mmHg
 - Glycaemic control if the patient is diabetic
 - Target HbA1c < 7% in most adults
 - Target HbA1c < 6.5% if achievable without risk of hypoglycaemia
 - Target HbA1c < 8 or between 8 and 9 in subjects of advanced age, frailty, and multiple comorbidities
 - Lipids
 - In patients with VERY HIGH cardiovascular risk, LDL cholesterol <55 mg/dl and at least 50% reduction with respect to baseline
 - In patients with HIGH cardiovascular risk, LDL cholesterol <70 mg/dl and at least 50% reduction with respect to baseline
 - In patients with MODERATE cardiovascular risk, LDL cholesterol <100 mg/dl
 - Anti-aggregation. In patients with associated cardiovascular risk

BMI: body mass index; DBP: diastolic blood pressure; LDL cholesterol: low density lipoprotein cholesterol; HbA1c: glycosylated haemoglobin; BMI: body mass index; DBP: diastolic blood pressure; SBP: systolic blood pressure.

low (<1%), moderate (1–5%), high (5–10%) and very high (≥10%). Other national tables can also be used if they have been correctly calibrated and validated, as shown in the recent adaptation by the Spanish Interdisciplinary Vascular Prevention Committee (CEIPV) on the updated European Cardiovascular Prevention Guidelines.²⁹ Other

scales such as the QRISK-lifetime cardiovascular risk calculator [<https://www.qrisk.org/lifetime/index.php>], which can be completed by the patient, can also be useful.³⁰

After overall assessment, the patient should be given structured education on healthy habits and their adherence to treatment should be analysed, as detailed in [Table 5](#). They

Table 6 Proposal for blood pressure monitoring in patients with hypertension and cardiovascular risk in the different areas of care.

	BP and CRV screening	Diagnosis and treatment	Follow-up
	<ul style="list-style-type: none"> • Every 5 years if BP is optimal (<120/80 mmHg) • Every 3 years if BP is normal (120–129/80–84 mmHg) • Every year if BP is normal-high (130–139/85–89 mmHg) and assess SMBP or ABPM • SCORE if age >40 or more than 2 risk factors 		
Self-monitoring and population campaigns Community pharmacy	+++	Provide BP readings SMBP if applicable + LC	Low-risk HTN Monthly SMBP
Primary care and hospital nurses	+++	Provide BP readings SMBP or ABPM if applicable + LC	Low-risk HTN Monthly SMBP
Primary care physician	+++	Definitive diagnosis, SMBP or ABPM if applicable +LC +Pharmacological treatment	Low and high-risk HTN Monthly SMBP
Hospital physician	+	Definitive diagnosis, SMBP or ABPM if applicable +LC +Pharmacological treatment	High-risk HTN, with multiple comorbidities or difficult to control SMBP every 15 days

ABPM: ambulatory blood pressure monitoring; LC: lifestyle changes; SCORE: Systematic Coronary Risk Evaluation; SMBP: self-measured blood pressure monitoring.

should be encouraged to follow the Mediterranean diet, maintain a healthy weight, ensure a low salt, <5 g/day, low fat diet, and they should be prescribed individualised physical exercise and quit smoking, if appropriate.^{9,29–32}

Finally, the patient will be given a general care and pharmacological treatment plan, assessing whether they have understood the changes and whether they need written information and if so how to access it. The next visit should be scheduled, pointing out warning signs that would mean the patient should get in touch sooner, complementary tests should be arranged if necessary, for the next check-up, and the accessibility of the next visit should be ensured. The need for the next visit to be face-to-face should be assessed, particularly in cases of established CVD, significant comorbidities or for physical examination, ABPM, electrocardiogram, ankle-brachial index, and specific education on lifestyle and SMBP.

Follow-up criteria in different settings

The frequency of the patient's visits will depend on their overall risk category as well as their BP reading. In general, a telematic check-up every 6–12 months is recommended for hypertensive patients at low or moderate CVR and whose BP levels and CVR factors are under control. The patient will always be recommended SMBP with precise instructions on how it is used, and will be provided the necessary documents or resources to help them adhere to both pharmacological treatment and a healthy lifestyle. Antihypertensive drug

treatment should be simplified using drug combinations, if necessary, in a single tablet, as advised in the guidelines, as this improves adherence to therapy.⁹

Patients at high or very high CVR, with poorly controlled BP and associated risk factors, CVD, or associated comorbidities, will need to be treated on an individual basis; a minimum of 3–6 monthly visits and an annual face-to-face visit are recommended. In any case, an initial face-to-face assessment visit will always be necessary both in primary care and in the hospital, when the diagnosis is confirmed, for physical examination and to assess complementary tests and establish CVR, and whenever the professionals deem appropriate given the patient's clinical situation, until they are appropriately controlled.

Table 6 summarises the follow-up criteria and the proposed frequency of check-ups in each area of care. Patient self-monitoring and internationally promoted screening campaigns should be encouraged, such as the May Measure Month, in which Spain has been taking part since 2017.^{33,34} It is also essential to involve community pharmacies in BP screening, encourage BP measurement by SMBP, changes of lifestyle in the low-risk hypertensive patient and monitor dispensing to check adherence to pharmacological treatment. The role of nurses in BP screening and monitoring low-risk HTN is essential in both primary and hospital care, both in terms of promoting SMBP, and in monitoring adherence to healthy lifestyles and medication. In all cases, there should be close coordination between all the professionals involved in the follow-up of the hypertensive patient and the frequency visits should be adjusted to the

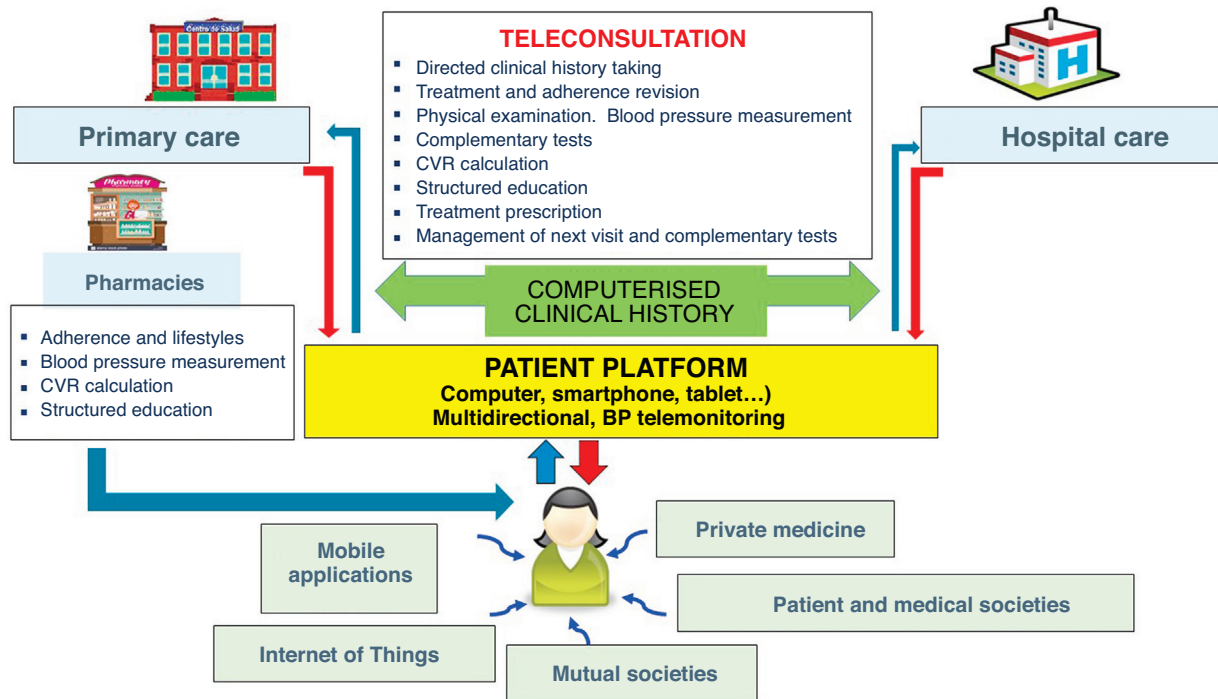


Figure 1 Proposal for a telemedicine and telematic care and communication model in the patient with hypertension and cardiovascular risk.

BP: blood pressure; CVR: cardiovascular risk.

degree of BP control and achievement of therapeutic objectives.

Referral to hospital should be assessed if secondary HTN is suspected, if the patient's HTN is resistant to treatment (readings above 140/90 mmHg when the patient is being treated with three drugs at maximum tolerated doses, including a diuretic), if there are therapeutic difficulties in patients with multimorbidity, polymedication or multiple intolerances to treatment. They should also be referred to hospital if they require diagnostic tests that are not available in primary care, such as imaging tests when needed for diagnosis or follow-up of HTN with organ damage because this could change therapeutic options, including ABPM when there are discrepancies or a great variability in BP readings, to confirm the white coat effect and masking in treated and untreated patients, to study high-risk HTN due to organ damage or associated CVD, if there is suspicion of abnormal BP patterns, for patients with symptoms of hypotension with antihypertensive treatment, resistant HTN, and for the assessment of HTN in children and pregnant women.^{26,27} Furthermore, emergency referral to hospital should be considered if urgent treatment is required (accelerated HTN, very severe HTN >220/120 mmHg, hypertensive emergency).

Fig. 1 graphically depicts a proposed model of telematic care and communication for the patient with HTN and CVR. It is a patient-centred care model that through telemedicine interacts with multiple health agents, and with primary and hospital care through the patient platform, which should be multidirectional and fed by data and clinical and laboratory information from the patient's medical record. The medical record should be computerised, freely accessible from

primary care and hospital, and preferably a single medical record, to avoid duplication.

Strategies for improvement and barriers to hypertension and cardiovascular risk management

Non-adherence to treatment and clinical inertia are major causes of poorly controlled BP levels in the hypertensive population. These aspects should be addressed with physician and patient education, which has been shown to improve the control of hypertensive patients.^{35,36} The guidelines recommend antihypertensive drug therapy in a single daily dose and fixed-dose combination therapy.^{6,9} A multi-strategy approach is also needed, involving the patient, healthcare staff and the health system, as well as investment in health education for the population.^{37,38} Effective behavioural and motivational strategies are recommended for adherence to lifestyle changes, because even small improvements have been shown to reduce morbidity and mortality.^{6,38} Team-based medical care is recommended for the management of the hypertensive patient. The team should include general practitioners, nurses, hospital specialists, pharmacists, and social workers.

Electronic medical records and the organisation of large population-based databases can help identify undiagnosed, poorly controlled or under treated hypertensive subjects. Furthermore, it may enable individualised interventions, such as contacting high-risk patients or physicians who have not completed a diagnosis of HTN. It is also recommended to develop strategies based on telemedicine or

mobile applications, that have also been shown to improve BP control.^{4,9,39} Quality improvement strategies should be multifactorial and require patients, families, and health systems to engage with them. The guidelines also stress that every adult with HTN must have a clear, detailed, up-to-date and evidence-based care plan to ensure that treatment objectives are met and comorbidities are effectively managed.^{6,7,9} It must include pharmacological and non-pharmacological treatment, the management of comorbidities, patient and family education, aspects concerning special patient groups, psychosocial factors, and a plan for clinical follow-up, supervision and coordination of care (follow-up visits, team-based care, electronic health record, health information technology tools for remote and self-monitoring) and socioeconomic and cultural factors. This should be provided verbally and in writing. Involving a family member or friend to help interpret and encourage self-managed treatment objectives is also recommended, if appropriate.^{6,7}

Conclusions

The COVID 19 pandemic has led to a change in healthcare for chronic disease and HTN and CVR in particular, and teleconsultation has emerged as a model of care to be developed in this scenario. The aim of this document is to act as a reference framework in telematic consultations relating to HTN and CVR in clinical practice, provide basic criteria for care and systematise their content. We also propose criteria for follow-up by the different professionals.

There is limited data on the implementation of telemedicine, although it is expected to gradually increase; teleconsultation is currently the most usual modality, which we discuss in this document. The development of new telecommunication technologies, data telemonitoring, mobile applications, etc., will broaden and improve care for patients with HTN and other chronic diseases in the future.^{4,5,8,40-43} Moreover, there is evidence that telemedicine is highly accepted and perceived as useful in HTN, and is expected to be implemented on a large scale given the high prevalence of HTN and the change in the healthcare scenario triggered by the COVID 19 pandemic.^{8,43}

Recent evidence from meta-analyses and systematic reviews on telemedicine with different interventions suggests improvements in BP reduction and better control compared to conventional monitoring of hypertensive patients.^{8,43-48} The best telemedicine models combine telemonitoring of clinical data between patients and healthcare staff, combined with messages via email, mobile phones, video consultation and educational programmes on lifestyle, risk factor control and starting hypertensive medication early.⁸ There are no data on the clinical effectiveness of telemedicine long term, and neither are there guidelines for optimal long-term follow-up in real clinical practice.⁴⁸

In addition to the data provided by clinical trials, the benefits of telemedicine in hypertensive patients who are being followed up in primary care are known, with improved BP control through SMBP and self-titration of antihypertensive treatment, yielding better cost-effectiveness data compared to conventional follow-up.^{19,42} There are few data on the role of teleconsultation in pharmacies, although

the data also suggest benefits in BP control. Therefore, it is recommended that intervention programmes should be maintained long term given the chronic nature of HTN.^{8,49-51}

During the COVID-19 pandemic, inequalities in the use of telemedicine have been described in more vulnerable groups, such as the older adult population, subjects with fewer financial resources, lack of access to technology and communication problems because they speak different languages, etc. These should be considered as telemedicine is anticipated to be in general use in the future.⁵²

In conclusion, due to the COVID-19 pandemic, teleconsultation has appeared suddenly in daily clinical practice and will expedite the development of telemedicine in health-care, especially for chronic patients. It is also a necessary tool that complements face-to-face care, and is expected to continue in the future as it is useful in the diagnosis and management of patients with HTN. For HTN, due to its high prevalence, this consultation model may provide an opportunity to improve the control and follow-up of patients by facilitating the transmission of information, either clinical data or educational content, and closer contact between patients and healthcare professionals. In this scenario, close collaboration between patients and all professionals, primary care and hospital and community pharmacy, is particularly necessary to provide correct coordination of care. In addition, the healthcare system requires organisational tools to facilitate communication between patients and professionals and enable adequate follow-up of aspects such as medication adherence, lifestyles, and risk factors.

There remain unanswered questions, such as whether its beneficial effect persists over time, the role of new BP measurement devices, mobile apps, or different health-care platforms in different settings, and whether there are potential inequalities in care that this care model might cause. Nevertheless, in the years to come it is to be expected that further studies will provide new information on the usefulness of teleconsultation in particular, and telemedicine in general, in the control and monitoring of HTN.

Conflict of interests

The authors have no conflict of interests to declare.

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