Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

administered anticoagulation therapy with LMWH. The patient's subsequent neurological evolution was good, although he presented with sequelae in the form of right hemiparesis on discharge.

A stroke can occur during the acute phase of the infection or even days and weeks following resolution of the viral phase.

Several pathophysiological mechanisms contribute to the increased risk of stroke in COVID-19 patients. The SARS-CoV-2 can infect the endothelial cells of the central nervous system, causing an inflammatory response in the blood vessels and endothelial damage, both of which, together with the thrombocytopenia present in some critical patients and the anticoagulant therapy, can contribute to the onset of microhemorrhages or cerebral hemorrhages.[3–5]

Because it is easy to overlook stroke in critically ill patients who are sedated and relaxed, we recommend early imaging if a patient has an altered consciousness or focal neurologic signs after discontinuing sedation.

Funding

This study has not received any funding.

Conflict of interest

The authors declare no conflict of interest.

References

1. Mao L, Jin H, Wang M, Hu Y, Chen S, He Q, et al. Neurologic manifestations of hospitalized patients with coronavirus disease 2019 in Wuhan, China. Jama Neurol. 2020;77:1–9, http://dx.doi.org/10.1001/jamaneurol.2020.1127.
2. Carod-Artal J. Complicaciones neurológicas por coronavirus y COVID-19. Rev Neurol. 2020;70:311–22, http://dx.doi.org/10.33588/rn.7009.2020179.
3. Berger J. COVID-19 and the nervous system. J Neurol. 2020;26:143–8, http://dx.doi.org/10.1007/s13365-020-00840-5.
4. Carroll E, Lewis A. Catastrophic intracraneal hemorrhage in two critically ill patients with COVID-19. Neurocrit Care. 2020;26:1–5, http://dx.doi.org/10.1007/s12028-020-00993-5.
5. Wu Y, Xu X, Chen Z, Duan J, Hashimoto K, Yang L, et al. Nervous system involvement after infection with COVID-19 and other coronaviruses. Brain Behav Immun. 2020;87:18–22, http://dx.doi.org/10.1016/j.bbi.2020.03.031.

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https://doi.org/10.1016/j.medcle.2020.08.002

Research during the SARS-CoV-2 pandemic☆

Investigación durante la pandemia por SARS-CoV-2

Mr. Editor,

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) or coronavirus disease 2019 (COVID-19) pandemic has had an unprecedented impact on recent medical history. Despite the advances made, the rapid spread of the virus has caused us to be faced with a total lack of scientific evidence on which to base our health care decisions. It is because of this that the scientific community has focused its attention on this disease, responding with an unparalleled number of studies to date. Thus, as of 17 July 2020, 2654 studies concerning COVID-19 were registered in clinicaltrials.gov, 1480 of which were classified as clinical trials (CTs). At a national level, the Spanish Clinical Trials Registry (REec, *Registro Español de Estudios Clínicos*) lists 101 clinical trials (10 completed, 51 recruiting, and 40 not started).

This scientific explosiveness has also involved drug research ethics committees (DRECs), whose activity has had to be adapted by means of remote meetings aimed at providing a quick response to the researcher's applications. In our DREC, we have managed to hold all ordinary meetings and to even add five extraordinary meetings (three involving the Permanent Committee). Between March and June of this year, we evaluated 75 studies (43 concerning COVID-19), which is a similar figure to the mean number of studies evaluated over the three previous years (73.3 studies). With three studies pending a final decision, 38 studies relating to COVID-19 have been approved to date (95% of those evaluated), another one has been cancelled by the sponsor, and the remaining one has been considered not evaluable due to corresponding to a purely care-related project. The median time elapsed until a final ruling was issued for these COVID-19 studies was 14 calendar days, as opposed to 21 days throughout the previous years. The characteristics of these studies, their comparison with respect to previous years, and the data of the REec are presented in Table 1. When considering the multicentric nature of the REec studies, one can see that those promoted by the industry are mostly multicentric (88.5%) in contrast to those promoted by public entities (39.7%) and by the researchers themselves (11.5%).

It is important to highlight the difficulty to evaluate studies during this stage, as the absence of evidence on which to base our health care was reflected in the absence of a scientific basis to support the practices to be evaluated, which is a particularly relevant matter in the context of clinical trials.[1] One cannot forget that the role of DRECs is not to develop research, but to ensure that this research conforms to fundamental ethical principles without allowing the context to modify these principles or their relevance.[2]

As mentioned earlier, Spain has been very prolific in terms of clinical trials. According to REec data, there are currently 26 ongoing trials using chloroquine or its derivatives, 10 using tocilizumab, 9 using corticosteroids, 7 using lopinavir-ritonavir, 6 using sarilumab, and 5 using remdesivir as investigational drugs. Without further delving into these studies or their specific designs, it is highly likely that there is a certain degree of overlap between some of them, with the consequences that this undoubtedly entails in terms of recruitment capacity and time to completion, as well as the risk that these studies might lack sufficient statistical power to reach valid conclusions. This overlap has been detected even in the studies evaluated by our committee, due to which we have unsuccessfully urged the researchers to unify their trials. It should be noted that this concern for the statistical power of studies has also emerged beyond our national setting.[3] For example, efforts have been made in Italy to combat this phenomenon by appointing a single national committee to evaluate all studies involving drugs for the treatment of COVID-19.[4] Other authors advocate for the continuous review of these studies and for the early termination of those without the intention of providing relevant information or merging with other studies of similar characteristics.[1] In other cases, these

☆ Please cite this article as: Muñoz de Nova JL, Ortega-Gómez M, Abad-Santos F. Investigación durante la pandemia por SARS-CoV-2. Med Clin (Barc). 2020;156:39–40.

Table 1
Characteristics of the studies evaluated and registered in the Spanish Clinical Trials Registry (REec).

	Design			Sponsor		
	Phase 1 CT	Phase 2–4 CT	Other designs	Principal investigator	Foundation or public entity	Pharmaceutical industry
2020 COVID-19 studies (n = 43)	0	6	37	35	8	0
2020 non-COVID-19 studies (n = 32)	2	4	26	24	2	6
2017–2019 studies (n = 220)	25	19	176	152	14	54
COVID-19 REec clinical trials (n = 101)	4	97	N/A	12	63	26

studies have been internationalized considering the asynchronous evolution of the pandemic.

From our point of view, the forcefulness with which COVID-19 has hit us can only be countered with equally solid and scientific evidence, with studies of lower statistical power and quality having to be relegated exclusively to providing more shade than light in this battle. Only through concerted efforts will we be able to achieve this goal.

References

1. Meagher KM, Cummins NW, Bharucha AE, Badley AD, Chlan LL, Wright RS. COVID-19 Ethics and Research. Mayo Clin Proc. 2020;95:1119–23, http://dx.doi.org/10.1016/j.mayocp.2020.04.019.
2. Luo Q, Qin T. Managing clinical trials for covid-19: the importance of ethics committees. BMJ. 2020;369:m1369, http://dx.doi.org/10.1136/bmj.m1369.
3. Zhang H, Shao F, Gu J, Li L, Wang Y. Ethics Committee Reviews of Applications for Research Studies at 1 Hospital in China During the 2019 Novel Coronavirus Epidemic. JAMA. 2020;323:1844–6, http://dx.doi.org/10.1001/jama.2020.4362.
4. Misure di potenziamento del Servizio sanitario nazionale e di sostegno economico per famiglie, lavoratori e imprese connesse all'emergenza epidemiologica da COVID-19. (20G00034) (GU n.70 del 17-3-2020) https://www.gazzettaufficiale.it/atto/vediMenuHTML?atto.dataPubblicazioneGazzetta=2020-03-17&atto.codiceRedazionale=20G00034&tipoSerie=serie_generale&tipoVigenza=originario.

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https://doi.org/10.1016/j.medcle.2020.09.001

Colonic mucosal ulceration following administration of calcium polystyrene sulfonate

Úlceras en el colon tras la toma de resina de poliestireno sulfonato cálcico

To the Editor

Polymeric cation-exchange resins, which can be sodium or calcium polystyrene sulphonate, are the usual treatment for chronic hyperkalaemia. In the last 25 years, several complications associated with its use have been described, with intestinal obstruction and colon necrosis being the most serious and lethal[1].

We report the case of a 57-year-old man with chronic kidney disease (CKD) with an estimated glomerular filtration rate of 23 ml/min/1.73 m^2. In the presence of hyperkalaemia (K^+ 5.7 mmol/l), treatment with calcium polystyrene sulfonate resin was prescribed. After one month, the patient developed rectal bleeding without systemic implications. A colonoscopy showed ulcers on the colon mucosa. A complete loss/atrophy of the epithelial component (surface and glandular) and associated ulceration were observed in the biopsies; the lamina propria showed a moderate acute and chronic inflammatory infiltrate, reaching the *muscularis mucosae* (Fig. 1A); characteristically, deposits with a mosaic pattern or "fish scales" that turn purplish/basophilic with haematoxylin-eosin (H&E) staining (Fig. 1B) and reddish with periodic acid Schiff (PAS) staining (Fig. 1C) were observed.

The findings described were compatible with calcium polystyrene sulfonate crystals/resins and the atrophy, inflammation and ulceration described could be a consequence of such drug treatment.

Given the clinical and hemodynamic stability, and without having observed major complications in the colonoscopy, conservative management was decided by discontinuing the cation-exchange resin. The clinical course was favourable.

Cation exchange resins have been used for the treatment of hyperkalaemia since 1975[1]. Its action takes place mainly in the colon. They are formulated to be administered orally or rectally in aqueous solution[1]. When constipation became apparent, a treatment was prescribed consisting of dissolving the potassium captor in sorbitol, an osmotic laxative, was prescribed. Subsequently, the side effects of sorbitol advised against its widespread use[2].

Given its physicochemical characteristics, the resin can crystallize and deposit on the intestinal wall leading to an acute inflammatory reaction. Sorbitol causes vasoconstriction with decreased intestinal blood flow, as well as cellular dehydration due to its osmotic capacity, it also has a direct toxic action on the intestinal mucosa by increasing inflammatory mediators such as prostaglandins (PG). Therefore, although the underlying pathophysiological mechanism is not clear, after reviewing the literature, both components, whether associated or individually, can cause intestinal necrosis regardless of the route of administration. The most commonly affected areas of the gastrointestinal tract are the distal ileum and the colon[2].

Various risk factors that favour this complication have been described, such as CKD, arterial hypotension, hypovolemia, inflammatory bowel disease, drugs that decrease intestinal motility, solid organ transplantation, and immunosuppressive treatment. Patients with CKD are more prone to intestinal necrosis due to different causes such as intradialytic hypotension, increased PG production or hyperreninemia that favours non-occlusive mesenteric ischemia mediated by angiotensin II[2].

☆ Please cite this article as: Álvarez Santamarta L. Úlceras en el colon tras la toma de resina de poliestireno sulfonato cálcico. Med Clin (Barc). 2020;156:40–41.