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Coronavirus, maternal fetal care and bioethics

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RESUMEN

La pandemia por la infección por el nuevo coronavirus (SARS-CoV-2) durante el embarazo conlleva problemas bioéticos potenciales en obstetricia crítica, asesoría prenatal y decisiones sobre la interrupción de la gestación y vía de resolución obstétrica. La atención materno fetal utilizando la medicina basada en evidencias del equipo de salud en MMF, en conjunto con disciplinas asociadas como la epigenética y la inmunología perinatal, debe utilizar valores bioéticos, guía y protocolos productos de consensos multidisciplinarios junto con la asesoría de comités de bioética, donde es indispensable manejar los principios de beneficencia y respeto por la autonomía además de la consideración del feto como paciente particularmente cuando hay viabilidad. El uso del diálogo esclarecedor y el juicio clínico deliberativo reflexivo tomando en cuenta los hechos, valores y deberes para tomar decisiones es la pauta ética y humana a seguir ante el tremendo desafío que representa la pandemia durante el embarazo en América Latina.

Palabras clave: *Bioética, coronavirus, SARS-CoV-2, atención maternofetal.*

SUMMARY

The novel coronavirus (SARS-CoV-2) pandemic infection during pregnancy brings potential bioethical issues in critical obstetrics, prenatal counseling, and making decisions over pregnancy termination and delivery. Maternal-fetal care using evidence-based medicine from the MFM health team, along with disciplines such as epigenetics and perinatal immunology, should use ethical values, guidelines, and protocols born of multidisciplinary consensus provided along with ethical committees assistance, where it is essential to apply the principles of beneficence and respect of autonomy, in addition to fetal consideration as a patient, particularly in presence of viability. Using enlightening discussion and reflexive prudent clinical judgment taking into consideration facts, values, and duties to make decisions is the ethical and human guideline to face the tremendous challenge represented by the pandemic during pregnancy in Latin America.

Key words*: Bioethics, coronavirus, SARS-CoV-2, maternal-fetal care.*

INTRODUCTION

The pandemic occasioned by the disease known as COVID-19, disease originated from a coronavirus that appeared in 2019 (SARS-CoV-2), related to the reports of cases from November of that year in the city of Wuhan, province of

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Hubei, China, and people that visited the city's market (1-5), is the first topic of discussion of professionals related to biomedicine. Such a situation was formally notified by the People's Republic of China's health authorities to the World Health Organization (WHO) in late December of 2019. One of the most unsettling questions for any professional or participant in the disciplines dedicated to health care in maternal-fetal medicine (MFM) in Latin America has the following formulation: Is the maternal-fetal health care team prepared for the big challenge of the attention of patients with COVID-19?

To paraphrase Kant (6), the previous conundrum is related to the illustrious three questions formulated in relation with the interests of reason: What can I know?, What should I do?, What am I allowed to expect?

To start with the answers to these questions we first need to remember the conception of contemporary medicine and in particular, the conception of MFM. According to León (7), medicine is a practice endowed with a necessary humanistic and moral orientation. The science and technique progress, just as the art state, that amplifies the capacity of attention and health care, raise proportionally the necessity of subordinate its use to increasingly ethical demands.

MFM by Cabrera et al. (8), is born from the need for prepartum vigilance, even from the preconception period of the mother-fetus pairing. For this, diverse clinical and paraclinical resources must be available, including biochemical, hormonal, radiologic, ecographic (with doppler and volumetrics), electronics, amniotic fluid parameters, in such a way that they allow to considerably decrease the maternal-fetal morbimortality.

In these times of pandemic for the COVID-19, that represents a public health crisis, experts in bioethics such as Seoane (9), highlight the multiplicity of languages such as the warlike language that occupies a large part of the governmental speeches and predominates in areas such as the communicational ("the war against the coronavirus", "the invisible threat"); the scientific language, closer to MFM, used to inform the evolution of the population's health in statistic terms; or political language, to transmit the social, economic and organizational measures adopted.

The bioethical approaches can contribute to solving the mistakes arisen from a warlike conception of SARS-CoV-2. "Crisis" comes from the Latin *crisis*, that comes from the greek *krísis*, which means decision, what the deduction entails is that this situation doesn't require to combat an enemy but to have a deliberative and reflexive sense to make good decisions that direct to an accurate intervention with a scientific and clinical component against the virus, as well as personal, social and economic measures (9).

War is not apart from civilization; not everything counts and not even the final goal (saving lives) justifies any means chosen to accomplish it. Even in war, we act in a moral world, and even though concrete decisions are hard, problematic, or atrocious, our language mirrors our moral world and allows us to formulate shared judgment (9). In particular, every medical decision derives in an ethical decision that requires the elaboration of value's judgment as well as rational judgment consequently the bioethical considerations in every scenario related to MFM must come together with medical professionalism with its four components (specialized knowledge, autonomy in the making of decisions, social service commitment and autoregulation).

Seoane (9), analyzes that for the construction of the decisions that the deliberation is the language of Bioethics and the method of the clinical ethic. Reflected if acting and deciding prudently, in a flexible manner going from concrete to single. Consequently, a health care professional in MFM should not rest on intuition, experience, theoric knowledge, imitation, or common sense so that the decisions during the pandemic in MFM reach the range of science. The method to make decisions must be structured in three levels: facts, values, and duties (10-12). As such, deliberative prudence in MFM would opt for the intermediate ways that harmonize every valor involved, rejecting the extreme courses of action, born from the belic approach and language.

In this line, Seoane refers that "saying something is doing something", because language determines the behavior of the person, configuring the social reality. Thus, the language of deliberation receives the minorities or discordant voices and fosters constructive dialogue in the decision (9,13-17).

The situation for MFM in Latin America could be resumed in what was announced by Esparza (1), "*The pandemic of COVID-19 is only starting and probably the worst has yet to come. Although we should wait for the better, we have the duty to prepare for the worst. Which makes necessary to answer with energy to the epidemic of COVID-19 is not what we know about it, but what we don't know*" The epidemiologic behavior of COVID-19 is different in its attack and lethal rate according to the country and region affected; because of this, the planned scenario for the preparation of the sanitary system in its different attention levels are diverse, as happens for instance in China, where the province of Hubei differs considerably from the rest of the country (18).

Although it is the initial stage of knowing the implications of COVID-19 during pregnancy, partum and postpartum, there are reports about pregnant women with COVID-19 infection with repercussions in their pregnancy and clinical, radiologic and paraclinical characterization in comparison with patients without pregnancy (19-21). Even if there are international clinic protocols, of organizations like the ones from the International Federation of Gynaecology and Obstetrics (FIGO as the acronym for its French name), or the International Society of Ultrasound in Obstetrics and Gynecology (ISUOG) or Society for Maternal-Fetal Medicine (SMFM) with varying grades of standardization, addressing the initial approach for the health care professionals in MFM, there is still much to know and uncertainty predominates around the therapeutic and prognosis in the mother-fetus pairing, vertical transmission possibility, congenital abnormalities or other disorders in medium and large term (22-24). In the same way, WHO recommends prioritizing maintaining the services of sexual and reproductive health, including the attention during pregnancy and partum using design mechanisms and simple goals in the coordination and governance of the answering protocols, identifying relevant services, optimizing the health attention centers, establishing the effective flow of patients in every level, quick redistribution of the capacities in the health care team, keeping the availability of health supplies, equipment and essential consumables (25).

Latin America can follow orientations from the *Pan-American Organization of Health* (*Organización Panamericana de la Salud*, OPS) and the bioethics network from the United Nations Educational, Scientific and Cultural Organization (UNESCO) about the ethical duty of the health care providers in MFM in giving the best attention possible and doing so in an equitable form; of each State in having systems with universal access and coverage to fulfill the right of health, without resources restrictions, with advice from bioethics commissions and civil societies in the attention of vulnerable populations such as pregnant women, eliminating individualist behavior, fostering the use of ethical and clinical-scientific criteria, based in equity, cooperation, solidarity and no discrimination (26,27). The magnitude of the situation is as the grave that, for April 10th, 5 months after the first cases in China, the situational report from WHO refers to 1 521 252 cases confirmed with 92 728 deaths globally, which 493 173 confirmed cases and 17 038 deaths are from America (28). Potential problematic situations exist that urgently need a bioethical approach in the attention of MFM during the pandemic of COVID-19 in Latin America such as the admission criteria in critical obstetrics, prenatal counseling of the infection of SARS-COV-2, and the decision of interruption of pregnancy and obstetric resolution.

DISCUSSION

Bioethics y Critical Obstetrics

Even though it is complicated doing estimations of the proportions of COVID-19 in pregnancy and its impact on the capacity of the sanitary systems in Latin America, specifically in the availability of critical obstetrics or intermediate care beds in MFM, experts in bioethics such as Emanuel et al. (29) refer that it can be predicted in statistic models, that the infection of SARS-CoV-2 is in 80 % of the cases asymptomatic or mild symptoms, of the 20 % left, 15 % have a serious illness and 5 % critical disease in the general public. Including conservative models, even the 5 % of the population in a country like the United States of America infected in the following 3 months after the first case in that

country take for granted (except in the flattening of the epidemiologic curve of infected individuals for a long period scenario) shortage of hospital beds, intensivists, beds in intensive care and ventilators.

This scenario of a shortage of sanitary resources for the pandemic is given in a country with 5 918 community hospitals and 209 federal hospitals with 96 500 beds in intensive care, which 23 000 are for neonatal and 5 100 pediatrics with 62 000 ventilators with a range between 10 000 to 20 000 are permanently in use. By the end of March 2020, with the Johns Hopkins CSSE data contributed and updated every 24 hours it was estimated that such numbers could increase in new cases up to 35 % each day after a country reaches 100 confirmed cases, although the use of the logarithmic scale can compare more the growth of the pandemic between countries, the use of the lineal scale allows to evaluate the real human impact (30). The reflection of the Hastings Center remains valid: "*The traditional approach of analysis of cost-benefit excludes formal considerations of distributive effect, of the type of equity and justice. Although discrepancies exist between the economists on how to resolve this problem, the equity considerations probably keep being underestimated in practice"* In other words, in the topics related to sanitary justice, ethic neglects economy and politics, and these, separate from ethic when they don't opt to replace it (31,32).

Thus, it is imperative to have certain preconceptions of the ethical considerations for a just distribution (equitable) of limited resources during the pandemic of COVID-19 to the obstetric population, to make conciliatory multidisciplinary approaches with politics and economic approaches. Emanuel et al. (29), refers that bioethical values for the assignation of limited sanitary resources in the middle of the pandemic, even though the different sanitary models in Latin America, can't be bypassed because they lead to better results without leaving the justice that influences the Latin American macro bioethic :

a) Maximize benefits: Save most lives, maximize the prognosis (save the most life years possible) have a higher priority.

b) Treat people equally: The first come first served guideline should not be used but instead the selection prioritizing the pregnant patient with a similar prognosis.

c) Promote and reward the instrumental value (benefit to others): In retrospective, give priority to those that have made relevant contributions in prospective form, give priority to those to those that most probably will make relevant contributions; for example, expectant mothers from sectors that maintain operative infrastructure during the pandemic such as civil or military security personal, health care sector and others. Under this consideration, give priority to the participants in investigations, when other factors such as maximizing benefits are equal.

d) Give priority to the worst: The guidelines that prioritize the sicker and younger are used when they are aligned with higher benefits, in particular, the polemic point of younger expectant mothers first if it can prevent the dissemination of the virus.

They realize six recommendations in consonance with these four value considerations, which is deeply important for critical obstetrics the following recommendations, that the authors consider important to highlight: a) give priority to health care workers and those sectors that maintain critical infrastructure operative for pregnant women, in centers with MFM about the use of personal protection equipment (PPE), diagnostic tests, prophylaxis and treatment, availability of beds in intensive care, potential vaccination; b) It should not be a difference in the disposition of limited resources (like the beds in intensive care and ventilators) between patients with COVID-19 and others with other conditions that require urgently availability of resources in critical obstetrics, such as patients with postpartum hemorrhage, hypertensive disorders of pregnancy or sepsis.

To give shape in clinical scenarios closer to our experience during the pandemic, about the making of ethical decisions regarding critical obstetrics, it is better to follow the criteria of classification of priority established by the *Sociedad Española de Medicina Intensiva, Crítica y Unidades Coronarias* in the context for the crisis of COVID-19 (33):

1) Priority 1: Critical and unstable patients which need monitoring and intensive treatment that cannot be provided outside the intensive care unit (invasive mechanic ventilation, renal continuous depuration...).
2) Priority 2: (Could be admitted in the intermediate care unit in MFM): Need intensive monitoring and could need immediate interventions, without intensive mechanic ventilation, receiving oxygen therapy of high flow or non-invasive mechanic ventilation for PaO2/FiO2 <200 or <300 with another organ failure.
3) Priority 3: Critical and unstable patients with low possibilities of recuperation because of a base disease or clinical and paraclinical predictors of COVID-19, being able to receive intensive treatment establishing therapeutic limits, such as no intubation or no cardiopulmonary resuscitation.
4) Priority 4: Admission not indicated because of minimal benefit or improbable for COVID-19 of low risk or patients with a terminal disease and irreversible associated with imminent death.

In this context of decisions in critical obstetrics, the chronologic age (for example, young expectant mothers above the older expectant mothers) should not be the only factor to consider. A global evaluation of the mother-fetus pairing must be done, adapting the therapeutic intensity according to the evolution, so in case of bad evolution, a therapeutic des-intensification could be proposed without delay, deriving the patient from areas of intermediate care in MFM or minimal, guaranteeing palliative attention. Likewise, there should be a consensus in the health care team in critical obstetrics in the criteria to apply in expectant mothers with COVID-19, with the planning of alternatives, respecting the principle of proportionality, and managing the transparency and trust in the communication with patients and family about the extraordinary of the situation and justification of the measures proposed (33).

Seoane (9), proposes denying the uniform treatment and quantifier of the problems from the data, in conjunction with the concept of Medicine Based on Evidence (MBE) in MFM presented by Cabrera et al. (34), neglecting the influence of the context and the biographic condition in the solution of the individual case. The authors consider that before anything else it is important that the health care team in critical obstetrics do not allow for emotions to dominate, such as fear or anguish, and to discard emotivism, that bases the decisions only on emotions without submitting to the scrutiny of reason. It is not about only curing but also caring and attending the situations of the vulnerability of the pregnant women, flexibilizing the criteria of visiting arrangements to facilitate accompaniment, and avoiding a departure in solitude: life is not the only valor that deserves protection.

In case that anguish and moral-assistance stress of the professionals hinder their activity, it is advisable to separate the making of decisions at the triage and the attention of patients in critical obstetrics, that answer to criteria and different goals from different perspectives as well (equitable and efficient distribution of resources to protect the collective health impartially; indicated and effective use of the resources that benefit the individual health), assigning the duties to an independent interdisciplinary committee. To reach decisions with equitable distribution of the resources combining efficiency and justice, it is needed to resist the urgency of the rule of rescue, remembering that COVID-19 is not the only pathology and not always the necessary priority that deserves the immediate response of the health system and the society connected to it (9,35-38).

Bioethics and prenatal counseling

One of the most complex problems at the course of the infection of SARS-CoV-2, in light of the novel and universal of the pandemic, is the making of prenatal counseling in an adequate manner about the potential effects of COVID-19 in gestation and potential effects on the fetus such as the possibility of vertical transmission, congenital abnormalities or posterior disorders in the medium and long terms.

In the first place, the health care team in MFM and the assistance and academic institutions should take into account in a dynamic form the

course of the pandemic in the region, as has been exposed by Cabrera et al. (34), is the MBE, defined as the conscious, explicit and prudent use of the best available scientific evidence at the moment of the mentoring, what has changed in the actuality in the relation professional-user of the health services in MFM. In this sense it is needed to institutionalize the government of the art in the region, the adjustment in the counseling to the available protocols or clinical practice guidelines in Latin America about the infection of SARS-CoV-2 in the course of the gestation, giving explicit recommendations based on systematic reviews of the literature, done by multidisciplinary teams, availability of resources, just as the specific professional training of the responsibility of doing the mentoring. The apparition of Big Data with the 5 "V" (volume, variety, velocity, validity, and valor), routinely implicated in MFM in the reality of Latin America and the Caribbean, has changed the attention in the prenatal counseling, from a perspective of the pathology to one starting from health, just as from a "therapeutic" approach to a preventive one and changes the patient into user, consumer or "digital citizen" (34,39-41).

Certainly, both parental anxiety and the scientific community's concern about COVID-19 and its effects on gestation are well-grounded. Like Pacora et al. (42) exposes, in the fetal disease pathogenesis, either congenital abnormalities or another medium to long term disorders, exists the genetic inheritance represented by the interaction of maternal genes with the genes of the product of conception acquired from the father, and the biological, psychological and social environment that determine constraints of fetal disease. These stressor factors are of eight types: anatomical, toxic-polluters, vascular, nutritional, metabolic, infectious (like SARS-CoV-2), psychological, and social. These factors individually or simultaneously influence the maternal-fetus/placenta unit with an adaptative response in two ways: 1) local with low perfusion of vital organs and anatomical abnormalities in their growth (congenital abnormalities), 2) diffuse with the development of the metabolic disease, pro-inflammatory cytokines and cellular oxidation that gives place to atherosclerosis and vascular disease. The fetal disease appears when stressor factors overcome the adaptative response (like is potentially feared in the infection of SARS-CoV-2).

The over activation of the antiangiogenic and the inhibition of the angiogenic ways subsequently to the stressor factors are related to the apparition of the large obstetric syndromes like a hemorrhage of the first, second and third trimester, hypertensive disorders of pregnancy, preterm partum, premature rupture of membranes, fetal or embryo's death, intrauterine growth restriction, postpartum hemorrhage, or neonatal morbidity associated with any of these in a subclinical presentation or deficient record of the stressor factors (what could happen with the infection of SARS-CoV-2) or by the fetal and maternal inflammatory syndrome (in case of symptomatic COVID-19). Additionally, it should be remembered that pregnant women usually have worse respiratory infections compared to their non- pregnant counterpart in addition to the known mechanical and biochemistry factors that affect the gas exchange and pulmonary function, related to immunologic factors like low activity of natural killer cells, macrophages, and T cells, with a predominance of TH2 humoral immunity over the TH1 response.

According to Barañao (44), during pregnancy, the prevalence of the TH2/TH3/TR1 response derives from an increase of the immune response with a predominance of anti-inflammatory cytokines. The production of antibodies is favored and in particular, to maintain the viability of the pregnancy, it is important the higher amount of blocking or asymmetric antibodies. However, the perinatal immunology still has multiple mechanisms in study and validation for obstetric syndromes or in normal conditions during viral aggression, like the action of female sexual hormones (estrogen and progesterone), cytokines production, antibodies production, the action of immune modulation proteins induced by progesterone, the role of the HLA-G antigen, the activity of certain immunocompetent cells like regulatory T cells, NK cells, and dendritic cells; the effect of apoptosis and the activity of macrophages, tryptophan metabolism and iron transport from the embryo, the inhibitory mechanism of complement and the expression of annexins.

It should be noted what was exposed by Avila,

Karchmer, and Salazar (43), and Avila, Avila, and Karchmer (45), concerning the perinatal epigenetic and immunology, consequently increasing reserves around the potential effects of SARS-CoV-2 and the influence of symptomatic or subclinical effect in pregnancy, with its immunologic tolerance response even though there is little evidence in particular to date due to the novelty and unpredictability of the pandemic with its viral genomic mutation capacity between regions and countries and the immunologic interaction between mother-fetus. Epigenetics is the branch of biology that studies the inheritable changes in the genetic function without a variation in the DNA sequence. It is still unknown how SARS-CoV-2 interacts and to what degree with the capacity of the humans to adjust their growth characteristics to the requirements imposed by the environment (genetic adaptation), either reversible by the composition of tissue and metabolism (accommodation) or permanent (plasticity) generating an early metabolic programming to early aggression or sensible stimuli producing structural or functional changes (45).

In these conditions exposed accordingly by Avila et al. (46) the ethic principle of beneficence acquires relevance and requires acting reliably to reach a higher balance of advantages over the damages in the lives of others. The prenatal counseling during the pandemic of the COVID-19 context requires an account of potential and relevant benefits and damages where the higher balance is produced considering the medical benefits for the mother-fetus pairing. It should be remembered that a paternalism risk exists in beneficence based on clinical judgment. Paternalism is a dehumanizing answer, and as such, should be avoided in MFM. All the alternatives related to beneficence, known as "reasonable medical alternatives" should be identified and explained to all patients based in the MBE around the infection of SARS-CoV-2 in gestation, accessible at the time of counseling.

The health care team in prenatal counseling should respect the parental autonomy, not interfering unless needed; helping the patient in their evaluation and classifying the diagnostic and therapeutic alternatives in a present or past infection by SARS-CoV-2, for medical management and the doctor should obtain and request the authorization or refusal of the procedures to apply from the patient. The approach of the health care team in MFM at prenatal counseling during the pandemic should be based around the health and interests of the expectant mother and this works as the base for the concept of beneficence and the duties of the doctor for her, although her perspective proportionate the base in autonomy related with the obligations of the doctor for her (46).

The ethical concept of the fetus as a patient is vital in this context of the pandemic by COVID-19 and pregnancy. When the fetus is considered the patient, the appropriate counseling recommends following management decisions for the fetus benefits. When the fetus is not the patient, the concept is based around a protocol of decisions for the mother, considering the available tools and their correct interpretation in the actuality for the diagnostic and potential treatment of the infection of SARS-CoV-2 during pregnancy. The authors share the vision of Avila et al. (46) who argue that the base of beneficence-duties with the fetus exists when the fetus reaches an independent moral state of a child and a person. That is to say, the fetus is a diagnosable and treatable patient whenever it is reasonable to expect a higher balance of beneficence over the damages in infection by SARS-CoV-2 still in later stages including postnatal medium and long terms. The ethical meaning of the concept of the fetus as a patient in MFM depends on the potential links established between them and their posterior attainment of an independent moral state (46-48).

Bioethics in the interruption decision and obstetric resolution

Another potential problem for the health care team with the infection by SARS-CoV-2 during pregnancy is the making of decisions and the obstetric resolution.

Product of false impressions that usually come from parents and other familiars could be part of the health care team preconceptions in MFM, and could also be demanded by the patient or their family such as treatment for COVID-19 in gestation, interruption of pregnancy (preferably by cesarean delivery) accepted like a proposal to follow from the start by the health care team in MFM, being a pre reflexive judgment

and therefore not being an adequate clinical judgment by definition according to Garcia (12). In this scenario, it is pertinent to make certain considerations from the bioethics standpoint. The authors share the point of view of Seoane (9), in that the method to make decisions about the interruption or continuation of the gestation, as well as the partum vs cesarean dilemma should be structured in three levels: Facts, Values, and duties, ones that are not based in the intuition, experience, theoretical knowledge, imitation or common sense. Then, prudent deliberative in MFM would opt for intermediate ways that lead to practical reasoning in this sense, together with the justification of the use of MBE that allows the evaluation of the decision and justifies the proportionality of the decision at the harmed values (9-12).

With respect to the level of the facts, three challenges are replied: what is happening (diagnostic), how will the situation evolve (prognostic), what can we do (treatment), remembering that the scientific propositions do not have an irrefutable or absolute characteristic. Regarding the level of values (health care team in MFM, patient, and family) that are the qualities we add to something or someone converting it in appreciated and deserving of respect, it is presented eventually the conflict of values, in which two or more positive values contradict each other and it is not possible to respect them both. Concerning the level of the duties, the ethic prudent deliberately answer the question "what should we do?" leading the resources to intermediate actions. In this case, that is dilemmatic, opting to continue or interrupting the gestation, or partum *vs* cesarean is not colliding opposing values, particularly if the enlightening dialogue is used, suggested by Gil (49), with the following functions:

a) Informative: It consists of a dialogue with variable time length, during which it is transmitted essential notions considered useful and needed to be known by the patient and family, accordingly to the most recent knowledge available and applicable to the professional practice in the region about SARS-CoV-2 and its complications in pregnant women, just as the implications of continuing or interrupting gestation and resolution particularly in the mother-fetus prognosis. It's considered an ethical imperative, a claim of medical morals, and the elemental attention of the patient as a person.

b) Educative: The health care professional in MFM that does not educate is halfway so, being necessary to mold or remodel the expectant mother and their family group according to the specific conditions of their particular unexpected process such as the COVID-19 pandemic, and their considerations regarding the interruption of pregnancy and the resolution; Henceforth, this situates the patient in their real condition, awakes their cooperation, reaches collaboration with the medic, teaches to continue the periodic observation, circumvents therapeutic obstacles related to the absence of cooperation from the patient or their families particularly regarding preventive measures, nurtures hygienic in a personal level, fosters the responsibility of the patient, helps with rehabilitation, leads the ill to reach a general educational level.

c) Motivational: A base of sustentation is generated through the doctor's attitude, which induces the patient to accept and follow their indications, understanding their situation concerning the interruption or continuation of pregnancy and the resolution.

d) Consensual: Every medical act done by the health care team in MFM should be consensual, with a strong ethical-legal commitment, requiring the convincing labor of the doctor for the making of decisions from the patient or their close relatives, depending on the case.

e) Psychotherapeutic: The words of the health care team in MFM have an undoubted action over the corporeality of the mother-fetus pairing, supporting and discharging its specific valor of healing agent, being patent the intention of beneficence for the patient, oriented eventually to elemental psychotherapy to attend emotional aspects.

Additionally, regarding the dilemmas raised about the interruption of the gestation and its resolution, it is important to remember the considerations of fetal viability exposed by Chevernak, McCullough, and Briozzo (50), defined as the capacity of existing after birth

with complete professional support and should be understood in terms of biological and technologic factors. The fetus's survival is related to the biomedical and technological capacities in a variable degree, that are different around the world. Because of this, there is no uniform gestational age globally. In industrialized countries, it is set approximately at 24 weeks of gestational age while in Latin America could be from stages of higher intrauterine growth. Dialogue and making of decisions in MFM based on beneficence should take into account the presence and severity of the detected fetal alterations, the gestational age, and the obligations based on the stage of severity of COVID-19 and the status of commitment or absence of the fetus as a patient.

Lastly, the author's share what exposed Becharano (51), who recommends avoiding following "trends" or "tendencies" without a solid scientific base and not fall into the "epidemic" of unnecessary interventions. Knowing necessary interventions from "unnecessary" is needed, finding balance, exerting MFM in an ethic and human way to address the tremendous challenge that represents the pandemic of COVID-19 during pregnancy in Latin America.

CONCLUSIONS

The course of the pandemic of COVID-19 and pregnancy in Latin America is complex and *in crescendo,* where even though the course of investigation in MFM associated in disciplines such as epigenetics and perinatal immunology related to the susceptibility maternal-fetal for the subclinical infection or symptomatic by SARS-CoV-2 has dynamically brought new knowledge, there is still much to know, such as congenital abnormalities and disorders in the medium and long postnatal terms, all which brings diverse scenarios of bioethical considerations, further than the apparition of clinical guidelines and protocols of international ethical orientations.

The potential bioethical problems in critical obstetrics, related to the just assignation (equitable) of limited resources should consider bioethical values that search the maximization of benefits, equal treatment of people, to promote and reward the instrumental valor and give priority to the worst, the use of criteria of prioritization in crisis situations for the admittance to intensive care units with the help of multidisciplinary bioethics committees, with the resources to make decisions following MBE's protocols, with global evaluation of the mother-fetus pairing, adapting the therapeutic intensity according to the evolution where, in case of bad evolution propose therapeutic des-intensification without delay and palliative care, making consensual decisions with planning to alternatives, under the principles of proportionality, transparency, and trust with the patient and their families, remembering that COVID-19 during pregnancy is not the only pathology needing an answer from the sanitary system.

Prenatal counseling from the health care team in MFM about the potential effects of COVID-19 in gestation and potential effects in the fetus such as the possibility of vertical transmission, congenital abnormalities or disorders in medium to long terms should not forget the use of the MBE in the context of Big Data at the individual and institutional level, in the expectation that the investigation in MFM, along with epigenetic and perinatal immunology, bring new knowledge usable during the prenatal counseling. The ethical principle of beneficence also requires an account of the relevant and potential benefits and damages that make the better balance in clinical benefits for the mother-fetus pairing, the principle of respect to the autonomy, avoiding paternalism. The ethical concept of the fetus as a diagnosable and treatable patient is essential in this context of the pandemic for COVID-19 and pregnancy when reasonably it is expected a higher balance in benefits over damages at the infection by SARS-CoV-2.

In light of the disjunctive about the making of decisions in continuing or interrupting gestation and partum or cesarean section, the prudent deliverance should precede pre reflexive judgment and structured in three levels: facts, values, and duties, deriving in practical reasoning in this sense, together with the justification of the use of MBE that allows the evaluation of the decision and justifying the proportionality. Enlightening dialogue is fundamental in communication with the patient and their families in their informative, educational, motivational, consensual, and

psychotherapeutic functions. The bioethical considerations based on the beneficence should take into account fetal viability, the presence and severity of fetal alterations detected, gestational age, and obligations based in the stage of severity of COVID-19 and the status of commitment or absence of the fetus as a patient to make decisions in an ethic and human way to address the tremendous challenge that represents the pandemic of COVID-19 during pregnancy in Latin America.

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