

## Absorption and metabolization of sex hormones and their transformation into contraceptive technologies: the paths taken by medical thought in Brazil

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**Abstract** *The article analyses knowledge assimilation and the development of clinical and research practices relating to sex hormones among Brazilian gynaecologists. It discusses the paths taken by medical thought from the reception of the hormones to their transformation into contraceptives. Our objective is to comprehend styles of introducing and disseminating medical technologies in the area of reproductive health in Brazil. It uses methods of historical analysis and takes as its source the Anais Brasileiros de Ginecologia, a journal published between 1936 and 1970. From the outset, the accompaniment of scientific breakthroughs in relation to sex hormones and their use to treat diverse female illnesses played a key role in the rapid medical acceptance of hormonal contraception. Scientific and technical questions (side effects, dosages) and the demographic issue formed part of the majority of the debates. Objections from the Catholic Church were considered but did not set the agenda of medical thought on contraceptives. The quest to consolidate gynaecology as a scientific, modern and cosmopolitan area of expertise, along with sanitary and demographic motives that allowed contraceptives to be classed as ethical drugs, are identified as processes underlying the assimilation and metabolization of sex hormones as hormonal contraceptives.*

**Key words** *Sex hormones, Contraception, Medical thought, Medical journal, History*

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## Introduction

The concept of *hormones* as chemical messengers that regulate organic processes first emerged in the early years of the twentieth century. In the 1920s and 30s, sex hormones were chemically identified, synthesized and commercialized as drugs for the treatment of diverse conditions, including menstrual disorders, infertility and menopause in women, and impotence and loss of libido in men. Therapies using female sex hormones were also extended to other conditions in the areas of dermatology, rheumatology, neurology, psychiatry and others<sup>1</sup>.

The ovulation-inhibiting properties of sex hormones were already known, but their transformation into contraceptive products occurred in the 1950s. The endeavours to develop a hormonal contraceptive drove the formation of a network bringing together scientists, physicians, feminists, philanthropists and representatives from the population control establishment. This process was gestated in the context of neo-Malthusian worries over population growth, an expansion in the power of biomedicine and advances in medicalization processes, the rise of the multinational pharmaceutical industry, transformations in the roles of women in many societies, and disputes over sexual and reproductive norms<sup>1</sup>.

In 1960, in the United States, the Food and Drugs Agency (FDA) authorized the commercialization of the first contraceptive pill, Enovid, produced by Searle. Contraceptive pills quickly spread in Brazil. In 1962, some brands were already being sold in pharmacies and thousands of women were already consuming the product<sup>2</sup>. In 1966, the magazine *Realidade* announced on its cover: “Brazil: 60 million pills per year.” In 1975, Richers and Almeida reported the strong growth in the sale of contraceptive pills: “in 1966, the market absorbed around 6 million cycles, while in 1974 the volume must have reached 38 million cycles. Over the same period, the number of laboratories producing oral contraceptives rose from four to thirteen by 1972, and to 16 in 1975”<sup>3</sup>.

As well as private clinics and pharmacies, the pills circulated through networks of private family planning entities. At least until 1965, these operated legally in Brazil, attending women from low-income classes and reaching distant corners of the country<sup>4,5</sup>. Despite the limitations imposed by the 1941 Penal Violations Law – which prohibited “advertising a process, substance of object designed to provoke abortion or avoid pregnan-

cy” – and the controversies surrounding family planning, doctors quickly turned into prescribers of pills, women into consumers, and the owners and employees of pharmacies into sellers of these products. By the mid-1970s contraceptive pills were already stabilized<sup>4</sup>.

In Brazil, changes to the fertility management practices developed in parallel with other processes of social transformation such as urbanization, industrialization, higher levels of general and female schooling, increased inclusion of women in the workplace, deepening processes of individualization, and transformations at the level of intimate relations. Such aspects have been explored in studies<sup>5-7</sup> that investigated the history of family planning in Brazil and the attempts to implant birth control programs. Less explored are the roles performed by medical gynaecologists, as experts of the female body, in the transformation of sex hormones into contraceptive methods and the conversion of themselves into prescribers of these products.

In countries like France and Spain, contraceptive pills encountered reservations and resistances from influential medical associations, as well as philosophical, ethical and political doubts over the role of physicians in the world of contraception<sup>8-10</sup>. In Brazil, Mario Victor de Assis Pacheco – a nationalist military officer and medical gynaecologist from the Faculty of Medicine at the Federal University of Rio de Janeiro – led the medical opposition to the new contraceptives, warning of the risks involved and denouncing the manipulations of the pharmaceutical industry and the interests of hegemonic countries in expanding their use<sup>11</sup>. However, it was not their viewpoints that would prevail among Brazilian physicians.

How were Brazilian gynaecologists able to absorb and metabolize the idea of drugs that were not intended to treat diseases or dysfunctions, drugs taken by healthy people? How did they accompany the international debates and produce local knowledge on sex hormones and hormonal contraception? How did they turn into prescribers of drugs that destabilized traditional moral, religious and natalist norms? Finally, how did they transform into disseminators of drugs that were prohibited by the legislation in force during the period?

This article analyses the processes of knowledge assimilation and the development of clinical and research practices relating to sex hormones among Brazilian gynaecologists. Specifically, it discusses the path taken by medical thought

from the reception of the sex hormones to their transformation into contraceptive products. The objective of the study was to investigate styles of introducing, disseminating, utilizing and translating medical technologies in the sphere of sexual and reproductive health in Brazil.

## Methodology

In the context of social studies of sciences and technologies, manuals, treaties, journals and other specialized publications play a key role in the formation of styles of thought and practice, forging opinions and knowhow, shaping the profile of scientists and their specialities<sup>12</sup>. These publications inform the way in which a particular phenomenon is perceived: rather than representing a sum of existing knowledge, they comprise the outcome of choices and disputes, which lead to the convergence of determined postulates towards a body of knowledge<sup>13</sup>. This is the viewpoint guiding the methodology of the present study. As our source material, we have used texts published between 1936 and 1970 in the main Brazilian gynaecological journal during the period, *Anais Brasileiros de Ginecologia*. Materials from all sections of the journal relating to sex hormones, including advertising, were included in the survey, irrespective of their utilization.

Various readings of the material allowed us to track medical thought on sex hormones and hormonal contraception in the period studied. As the analysis deepened, some questions solidified, such as the investments in the construction of a scientific, modern and cosmopolitan gynaecology, the development of the idea of sex hormones as ethical drugs, openness to a gynaecological practice concerned not only with female diseases but also with the medic(aliz)ation of kinds of behaviours and needs other than clinical.

By grounding the study in a historical perspective,<sup>14</sup> the aim was to open new analytic horizons concerning the modes of assimilating contraceptive technologies, identifying ruptures and continuities that can help us comprehend contemporary processes of introducing and circulating sexual and reproductive health technologies, a theme that has proved controversial.

### ***Anais Brasileiros de Ginecologia* and the renewal of Brazilian gynaecology**

The journal *Anais Brasileiros de Ginecologia* was one outcome of the renewal of Brazilian

gynaecology that occurred in the mid-1930s, a key moment of which was the appointment of gynaecologist Arnaldo de Moraes to the Chair of Gynaecology of the Rio de Janeiro Faculty of Medicine. Moraes had specialized at John Hopkins University (1927) and studied in Germany, Switzerland and France. In the same year that he assumed the Chair of Gynaecology, 1936, he founded not only the journal but also the Brazilian Gynaecology Society. The journal translated the modernizing objectives of its creator. In its first editorial, *Anais Brasileiros de Ginecologia* was presented as “a monthly publication exclusively scientific in kind” founded in order to disseminate ideas related to “modern gynaecology” (1936/1/1). References to the source are presented in order [year, volume and issue number of the periodical]. It proposed to function as a vehicle for medical discussions and a space for building scientific knowledge, focusing on a broad spectrum of questions related to gynaecology and obstetrics (ibid). The journal published original works produced in the country and presented discoveries from the field of gynaecology published abroad, based on summarized reports, some of them followed by comments. In a short time the publication had become a reference point in the field of Brazilian gynaecology.

The journal was funded by the advertising of medications, surgical instruments and other medical items and by peers through paid subscriptions. Reading the publication, the strong relationship with industry can be readily discerned: many of the articles are interspersed with adverts for medications and medical supplies, related to the same objects discussed in the texts. The journal was published monthly in uninterrupted form until 1970, when, retaining its editorial team and collaborators, the name was changed to *Revista Brasileira de Ginecologia e Obstetrícia*.

### **Gynaecology and hormone therapy: the beginning**

The history of the development of knowledge and practices related to hormones is well-known. At the end of the nineteenth century, experimental physiology worked closely with endocrinology and produced the first scientific knowledge on substances secreted by animal glands<sup>1</sup>. In 1905, the English physiologist Ernest Henry Starling formulated the concept of hormones as specific chemical substances, produced by particular cells and transported via the circulatory system, capable of producing effects in different body organs<sup>15</sup>.

At the start of the twentieth century, studies of hormone functions and the possibilities for their therapeutic use flourished, a key landmark being the isolation of insulin by Canadian researchers in 1921<sup>16</sup>. During the same decade, European scientists isolated oestrogen and testosterone, and hormone therapy transformed into an object of major interest of gynaecologists, who began to study the action of sex hormones on different aspects of female physiology<sup>1</sup>.

Hormone therapy also stirred interest in the Brazilian medical world where ideas developed in the nineteenth century circulated, interconnecting sexuality, genitalia – first the uterus and subsequently the ovaries – and various female diseases<sup>17</sup>. Articles from *Anais Brasileiros de Ginecologia* reveal the enthusiasm of local gynaecologists concerning the new possibilities offered by hormone therapies, represented as an emblem of the attempt to construct a modern and scientific gynaecology, more appropriate to meeting the needs of middle class urban women – the question of how these products could also respond to the needs of poor women came later with the debate on the role of the contraceptive pill in the “demographic crisis”<sup>4,5</sup>.

Studies of sex hormones occupied the pages of *Anais* throughout the journal’s lifetime. In the year of its foundation, the editorial *Gynaecological hormone therapy* assessed the advances in knowledge of female sex hormones and discussed the clinical utility of these products:

*A series of important discoveries, a fantastic mass of experimental and clinical research has, in a short time, completely changed the classic notions.* (1936/1/2)

Next to the studies of sex hormones, a variety of commercials announced the hormone products, fomenting the creation of a market for the new medications. In the first few years, hormones of animal origin – such as Preloban by Bayer, prepared from the anterior lobe of the pituitary gland – were announced for sexual disturbances, metabolic anomalies and diverse female problems.

The end of the 1930s marked a sea change in the hormone studies and adverts following the production of synthetic oestrogens in European laboratories. In the 1950s, norethisterone was developed, the first synthetic progestogen suitable for oral use<sup>16</sup>. More potent and cheaper artificial hormones expanded the horizons of hormone therapy and the overall interest in studying hormones, including in Brazil.

At the turn of the 1950s, the international medical and scientific community debated the

need for greater knowledge and standardization of hormone dosages for diagnostic and therapeutic purposes and, in the pages of *Anais*, Brazilian gynaecologists accompanied the discussions. Effectiveness, adverse effects and safety in the utilization of sex hormones were also common themes. The first publications on original research conducted in Brazil appeared during this period, led by Clarice do Amaral’s studies of sterility. The widespread enthusiasm concerning the possibilities opened up by the discoveries on the role of hormones in the physiology of reproduction can be seen in numerous articles. In the words of Arnaldo de Moraes:

*Considerable advances have been made in recent times with contributions by physiologists, chemists, physicists, endocrinologists and gynaecologists. The increasingly sophisticated means of investigation have enabled clinical advances in gynaecological endocrinology, identifying new syndromes in particular.* (1954/37/5)

The growing interest in hormones is also observable in the adverts published in the periodical, which swelled in volume in the 1950s. Foreign laboratories like Shering and Organon advertised their hormone-based preparations (Testoviron, Proginon, Proluton, Menstrogen, Neutrotex Mixogen, Adreson), indicated for the menopausal syndrome, frigidity, osteoporosis, prostatic hypertrophy, chest pain, arterial spasms, and so on. National laboratories, like Casa Silva Araújo, also marketed their own products, such as Benzo Gynoestril, indicated for ovarian insufficiency, disturbances of the menstrual cycle, menopausal perturbations and vomiting during pregnancy.

At the start of the 1960s, authorization for the commercialization of hormone products as a contraceptive method in the form of combined pills of oestrogens and progestins, in the United States, and their arrival in Brazil, would pose new questions and demand other positionings from gynaecologists.

#### **From cycle regulators, ovulostatics and anovulatory medications to contraceptive pills: the paths of thought of Brazilian gynaecologists**

*Gynaecologists are the physicians who prescribe the least hormones. In compensation, they seldom if ever receive a patient who has not taken a hormone for some reason or other, or indeed for no reason at all. It astonishes us the number of women who take oestrogenic hormones for all variety of nonsensical indications. No wonder, therefore, that the results*

*of the therapies are precarious or even prejudicial. We should consider, however, that therapy with oestrogens is incorrect if there is no absence or relative deficiency of this hormone. Therapy is substitutive and, as such, symptomatic. Nothing else has an acceptable practical basis. A patient cannot be allowed to use these substances permanently in order to provoke anovulatory cycles. No woman can accept this.* (Ramos 1958/46/5)

In 1958, an editorial in *Anais Brasileiros de Ginecologia* denounced abuses in the use of sex hormones. All kinds of hormones were being given to women of all ages, indicated by all sorts of doctors other than gynaecologists for a huge variety of conditions. This pattern of scant diagnostic verification and high imprecision in the indication of hormone treatments had to be confronted. The text's note of warning suggests the fear that such use could harm the scientific respectability of the professionals and place the medication on the list of panaceas prescribed by bad doctors. Nonsensical and unacceptable indications were also identified in the case of problems without medical causes, or at least not hormone-derived: frigidity, nervous disturbances, senility, obesity and so on. Especially repudiated was the use of hormones to provoke "anovulatory cycles," which violated ethical norms. Finally, the editorial discusses medical and scientific criteria and ethically acceptable and unacceptable uses of sex hormones. The gynaecologists seek to retain some control over the indication of hormonal preparations: they, as professionals with specialized scientific knowledge, should be the physicians able to diagnose and treat hormone-related female problems.

Less than two years later, in 1960, an editorial entitled *Population control, fertility and hunger*, written by the same author, Vespasiano Ramos, presents in detail the international debate on the problem of "disproportional population growth" and the threat of scarcity and famine. While in the 1958 editorial, and in previous issues of the journal, contraception was an irrelevant topic – perhaps not even deemed a medical issue – in 1960 the author called on physicians to assist scientists and governments in the search for solutions to the population question.

*Gynaecologists, biologists, chemists, endocrinologists and above all scholars of sterility problems must be invited to help science and governments to control the population and thus avoid catastrophes, such as the death of thousands and millions of adults and children from famine.* (Ramos 1960/49/6)

It was necessary to assume (and demand) the contribution of experts in relation to the new medications, both because of their technical capacities, and because of the role that they could perform in the sociodemographic crisis. However Ramos's call seems to have met nothing but silence in the first few years, since no other texts on these issues can be found until 1965. But although the articles initially make no mention of the circulation of anovulatory medications on the national market, the adverts that filled the journal's pages reveal that something was indeed happening in the world of hormonal pills. Faced with legal restrictions on advertising and selling products with a contraceptive purpose, the adverts highlighted other clinical indications of the product: infertility, recurrent natural abortions, menstrual disturbances and so on. Adverts by Farlutal (Farmitália), Lindiol (Organon) and Novulon (Johnson & Johnson) sought to awaken medical interest and advised that a "vast literature on this speciality is available to the medical class." At the time, the new strategy of the pharmaceutical industry was to invest in ethical propaganda, targeted directly at physicians<sup>18</sup>.

Until 1965 gynaecologists were metabolizing the arrival of new products and, in the corridors of the speciality, had still not yet decided how to deal with them. In the year in question, the editorial *Progestational compounds* by Vespasiano Ramos broke the silence: the author emphasizes the therapeutic potential of sex hormones for a range of gynaecological problems (bleeding, menstrual regularization) and writes that "the field of application of these substances is huge, therefore, with, today, the emphasis being placed above all on their use in birth control." The pills are presented in positive form. Ramos adds that "the side effects in general do not impede patients from continuing to use the medication or method, since by changing medication the effects can vanish." The pills generated tensions between medicine and Catholic doctrine, but with optimism and subtlety the author writes that "the Church's final pronouncement on the convenience of the method as a contraceptive is still awaited". He concludes the editorial with the same enthusiastic tone seen at the start: "as we can see there are various aspects for which we can appreciate these modern substances. The therapeutic results have been encouraging; definitive conclusions, however, will only be reached over the next few years". (1965/60/1). In the journal, the introduction of a discussion on the contraceptive potential of hormones was accompanied

by a wider variety of advertisements for anovulatory medications, including Sequens (Eli Lilly), Anovlar (Berlimed) and Noraclina (Ciba).

After this moment, gynaecologists from different areas of Brazil began to publish studies and comments in *Anais* on hormonal contraceptives. Side effects, safety, dosages and effectiveness are all explored themes, but problems, uncertainties and doubts were understood as transitory, matters that would be resolved with further research and subsequent technological developments.

In February 1966 a *Special issue on gestagens* was published with the largest print run of *Anais* to date. Its 14 articles (a much larger number than the usual 5 or 6) included an *Introduction*, *Editorial*, *Lessons and talks* and *Notes and comments*. In the introduction, Marcel Peano celebrates the production of this special issue, combining voices from all over the world (Switzerland, Germany, Egypt, the United States, Italy, Israel).

*Today we are proud to place at the service of the medical class specialized in gynaecology and obstetrics, 20,000 copies of the special issue, dedicated to synthetic progestogens. (...) Were it not for the experiments made by dozens of researchers in more than 15 countries, underlining the persistent innocuousness of these substances, we would not be here today presenting them. Hence the potential use of these substances as anovulatory medications, when theological-moral reservations permit, when the Penal Code and the Medical Ethics Code are changed with respect to this purpose, and provided that regular and rigorous gynaecological exams are made.* (Peano 1966/61/2)

The recruitment of experts from the most distant academic centres seemed to indicate that the gestagens had arrived to stay. A local positioning and a global alignment were necessary.

In the editorial *Synthetic oral progestogens (compounds and sequential treatments)*, Arnaldo de Moraes Filho discussed the multiple therapeutic indications of these products. With regard to their specific use as anovulatory medications, he stated that this “has been confusing the specialist,” though he recalls that:

*The synthetic oral progestogens were known primarily as anovulatory medications. As such they appear to have demonstrated, according to the works of Pincus, Mears, Tyler, Rice-Wray, among others, in hundreds of thousands of cycles, effectiveness and innocuousness in terms of organic acceptance.* (Moraes Filho 1966/61/2)

The themes of the special issue articles included the state of scientific and medical knowledge concerning oral contraceptives, sequential

treatments, grounds for the use of progestins in demographic control programs, and other topics. Contraceptives, gestagens, progestogens, anovulatory medications, cycle regulators and ovulostatic drugs were used as synonyms without any conceptual differentiation: there was no longer any need to avoid use of the term ‘contraceptive.’ A positive view of these medications prevailed and the authors emphasized the commitment to promote good use of the products and enable the new technology to prosper: “the chemists and pharmacologists have placed the first really effective means in our hands and it is important to learn about them well in order to use them in the most advantageous way” (Goldzieher 1966/61/2).

The Brazilian articles focused on a specific aspect related to anovulatory medications: the need for medical authorisation for the drug to be indicated. Many proposed that, prior to the use of hormonal products, there should be “full clinical and gynaecological exams to check that there are no processes that could lead to contraindication of the therapy.” In the editorial, Moraes Filho had also called attention to this question.

*When we employ such substances, it is essential to control these patients regularly. This measure is valid since in Brazil there are thousands of women using, at their own initiative, progestogens as contraceptives as well as for therapeutic purpose.* (Moraes Filho, 1966/61/2)

To legitimize medical supervision of women using anovulatory medications, the contemporary legislation also had to be changed. In the section *Notes and comments* Jean Claude Nahoum argued that: “the Brazilian laws need to be altered, allowing contraception to be taught in medical faculties, which will be undertaken in gynaecology departments.” Another note, which includes a report on the *Symposium on Birth Control organised by AMEG*, remarks that the legal question was negotiated directly with the minister Nelson Hungria, who “praised the contraceptive pills, remarking that he has been entrusted with reformulation of the penal violation laws and advocating the open sale – under medical supervision – of birth control products in accordance with the couple’s wishes.” The note argued for the relevance of a birth control policy in Brazil and the role of hormonal contraceptives in the enterprise. One group of physicians was in favour of “family planning organised by the State” with the aim of containing high birth rates, a factor in underdevelopment. Others were against state control of fertility, but supported the control of birth rates as a question to be resolved

between the woman and her doctor, “without intermediation of the State.”

From 1966 onward, the debate on the technical and medical dimensions of gestagens shared space with the population issue. The method was already judged suitable from the technical viewpoint (despite the continuing search for improvements) and the new challenge – beside removing the legal constraints – was to metabolize the social question in which it was embroiled: the demographic issue.

Medical participation in the creation of private family planning entities was also recorded in the journal. One note announced the setting up of the Paraná Family Well-Being Society and discussed its proposal to work closely with similar institutions nationally and abroad (1966/61/3). Another note reported on the First Congress of the Brazilian Family Well-Being Society (Bemfam) in 1966, emphasizing the importance of the event for the medical class since it would include the presentation of an important “critical study of contraceptive methods.” The collaboration between gynaecologists and family planning entities – Bemfam in particular – resulted in various local studies on drug effectiveness, adverse effects, formulations and other topics, all published in the final years of the 1960s.

The metabolization of hormonal contraceptives also took place through internships and training courses in specialized services abroad. In one article Luiz Ferraz de Sampaio Júnior recounted his impressions from an internship in Chile where he not only learnt about pills, “notions fairly well-known to all Brazilian colleagues,” but also about intrauterine devices (1966/62/2).

The question of Brazil’s socioeconomic underdevelopment was the subject of a note entitled *Family planning in the face of Brazil’s development*, in which the gynaecologist Hilda Maip discussed excessive population growth, the “proliferation of the so-called ‘favelas’” and their social and economic consequences. Echoing Vespasiano Ramos’s editorial, she called on physicians to ally with the demographic control agenda: “the work developed by ABPF [Brazilian Association of Family Planning Entities] from Belém do Pará to Porto Alegre merits the attention of scholars striving for the victory of good sense over ignorance and prejudice.” In the same issue, Arnaldo de Moraes Filho published a note on a “social medical study” involving 11,000 women, which found that 70% had reported an undesired pregnancy and 46.45% had obtained an

abortion. These findings, he concluded, justified medical intervention in family planning since “[this group] requiring advice on family planning should serve as a warning to sociologists and theologians-moralists” (1966/62/5).

When it came to resolving tensions over the uses and social effects of anovulatory medications, technical questions were almost entirely merged “with socioeconomic, public health and religious aspects” (1967/63/1). Talking about ‘family planning’ almost always implied talking about new contraceptive methods, and vice-versa. In 1967, Luiz Alfredo Correa da Costa affirmed that “the solution to these [population] problems lies in the hands of the statesmen, whose effective response to the questions concerning our possibilities for economic development is keenly awaited.” On the other hand, he continued, “the problem of criminal abortion is thus a public health issue for doctors, and [...] the lesser evil would be to provide contraceptive advice to women known to be exposed to the risk of illegal abortion” (1967/63/1).

The Eighth International Conference of the *International Planned Parenthood Federation* (IPPF), held in Chile, in 1967, entitled “Planned Parenthood – A Duty and a Human Right,” received complimentary remarks in one note: “a highly contemporary theme, it forms the motto of the IPPF and will echo victoriously in the world, were it to be promoted as a slogan calling for vigilance and persistence, not one appealing for sterile agitation or authoritarian imposition, but a rational, responsible and convincing alert” (1967/63/1). The search for a moderate position in the highly controversial debate on population growth, fertility and contraceptive methods<sup>4,5</sup>, began to appear in the journal during this period. In 1967, the editorial *Population growth and birth rates*, written by Arnaldo de Moraes Filho, argued that population questions should not be treated in exclusive terms, as either for or against. Instead good sense was necessary, an approach that took into account Brazilian specificities.

As well as the technical and social aspects involved in the use of contraceptives, another dimension urgently needed to be addressed: the legal aspect. The subject was a theme of the Fifteenth Brazilian Conference of Obstetrics and Gynaecology, held in 1965, the discussions from which were published in an issue of the *Anais* in 1967. In two texts – *Legal aspects of family planning* and *The legal status of the problem* – the question was presented of birth control as a universal problem, seeing that “practices against

procreation have concerned man since the most ancient times.” Inviting their colleagues to engage in a discussion that avoided the polarizations typical of the period, the authors argued that each time and place deals with this same question differently.

In December 1967, the journal republished the editorial by Vespasiano Ramos from 1960, stressing the “considerable contemporary relevance of the theme in question.” The idea of the importance of family planning and a reduction in the birth rate seemed to be consolidated. The different positions among the medical groups – “favourable, opposed and undecided” – should not affect clinical practice, Jose Maia Bittencourt argued:

*Despite the restrictions imposed on the method by some, one cannot deny the reality of its acceptance by a large proportion of the medical class and by enlightened couples. (1968/65/1)*

After gestagens became accepted as hormonal contraceptive technologies, the gynaecologists still had other questions to resolve: knowing how to indicate suitable treatments, resolving ethical tensions (change the Code of Medical Ethics) and legal conflicts (change the legislation), and ensuring that the indication of contraceptive methods was the exclusive role of doctors, with a medical prescription required for their use.

The introduction of contraception on medical courses, the development of new ethical and legal guidelines, and the training of “medical researchers performing high-value experimental work” were posed as challenges for the coming years, aiming to consolidate gynaecology as a scientific, modern and cosmopolitan specialist and to transform medically managed contraceptives into ethical drugs designed to improve the well-being of people in everyday life – as Vespasiano Ramos had already argued in 1966. Some of these challenges began to be confronted in the final years of the 1960s when the *Anais* published articles on original clinical studies conducted with contraceptives by Brazilian specialists. The era of investigating the topic scientifically had begun, using globally recognised methods and the best and most adequate products for use in the Brazilian context.

## Conclusion

The journal *Anais Brasileiros de Ginecologia* provides us with clues to how Brazilian gynaecologists accompanied and systemized new dis-

coveries in the field of the physiology and endocrinology of reproduction from the beginning, appropriating knowledge about the ovulatory cycle and sex hormones, adhering to the widespread use of these substances, and taking them as a landmark in the new diagnostic, therapeutic and scientific frontiers of this field of expertise. In the first half of the twentieth century, sex hormones seemed to crown a process begun in the previous century of consolidating gynaecology as a discipline distinct from obstetrics, broadening considerably the possibilities for the clinical management of what had been born as an eminently surgical speciality<sup>19</sup>.

In the first editions of *Anais* (and with its collaboration) we can already observe the development of a *modernizing style of thought* among Brazilian gynaecologists – and also obstetricians<sup>20</sup> – whose elements can be delineated as: a belief in the linear and assured evolution of science; an openness and eagerness for the incorporation of scientific and technological innovations; promotion of the cosmopolitan nature of Brazilian gynaecology; a project designed to place Brazil shoulder-to-shoulder with other nations in terms of scientific and technological dynamism.

In the 1940s and 50s, clinical and scientific investments in the field of infertility and the standardisation of hormonal dosages enabled the emergence of a network of practices and abilities. This setting ensured in turn, that when the recently developed contraceptive pill arrived in the following decade, it would be comprehended as an object consistent with the medical research on hormones and their utilization in treatment. As their use spreads, pills and other medical objects arrive in an already populated world<sup>1,21</sup>.

In the 1960s, the accumulated knowledge and practices related to the prescription of already existing hormones cleared the way for the diffusion of hormone compounds for contraceptive use under the supervision of gynaecologists. Were it not for the ethical, moral and social ruptures that its existence provoked, the pill would have been assimilated in much the same way as other medications during the period – that is, without much controversy. However the new drug was now targeted at a healthy population and promoted a controversial social practice: fertility control. How to absorb and metabolize drugs that were so destabilizing of the existing norms? How to recruit allies, as a first step, within the medical world itself and subsequently in the outside world? How to turn contraceptives into ethical, opportune and legal drugs?



The modernizing style of thought intervened to help gynaecologists – an enthusiasm for scientific and technological novelties, a belief in medical progress, an alliance with the world's most dynamic medical centres. Historically, however, medical-gynaecological thought and the community formed by gynaecological practice had developed a number of features more closely associated with medical groups linked to public health: a sense of a political and moral mission, involving the intervention in wide-ranging social and ethical crises. Inside and outside the field of the speciality, they compiled elements for the construction of meanings and the elaboration of discourses that justified the medical class's assimilation of sex hormones as a contraceptive.

Medical problems – and non-medical ones that could nonetheless be solved using medical technologies – were evoked in defence of the opportuneness of the pill for Brazilian society: the demographic crisis and underdevelopment, a debate that dominated the Brazilian and international political agendas during the years when the new contraceptives were being introduced<sup>4,5</sup>; multiple births and their relation to maternal and child mortality<sup>7</sup>; unwanted pregnancy and

the criminalization of abortion<sup>4,5</sup>; the moral value of responsible parenthood<sup>4</sup>. Hence, despite not being focused on curing or mitigating physical afflictions, the hormonal contraceptives could be presented as ethical drugs. Although the positions of gynaecologists in relation to these questions were diverse, most of them reinforced the value of hormonal contraceptives in the resolution of social and health problems, which were endemic during the period.

As they produced discourses justifying the opportuneness of the contraceptive pill, they garnered legitimacy to assume the role of experts in the management of these medications and as authorized voices on the issues of producing clinical guidelines and legal regulations – as experts, they claimed a monopoly on prescribing and controlling their use. Under medical management and supervision and within these discursive frameworks, the control of the fertility of healthy women with medical drugs could be more than just an opportune practice: it could be safe, ethical and moral. Hence medical thought absorbed and metabolized sex hormones as contraceptive technologies.

### Collaborations

C Bonan, LA Teixeira e AR Nakano participated equally in all stages of preparation of the article.

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