

# ART babies & Chinese medicine

As the first generation of ART babies reaches adulthood, Elisa Rossi and her team at the Xiaoxiao Clinic in Milan are speculating on the link between ART conception and qi disorders. In this article, Elisa describes a research project using paediatric tuina to treat infants conceived via ART.



## Elisa Rossi & Xiaoxiao Team

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As practitioners we see ever more children conceived via assisted reproductive technologies (ART) and we start to reflect on a possible association of the recourse to ART and disorders of qi in infants.

In Milan, at Xiaoxiao Clinic of Chinese Medicine for Children, we have designed a multicentre study to evaluate infants conceived via ART according to Chinese medicine, and to support them with paediatric tuina. The project is both research and clinical work, based on the evidence for the effectiveness of Chinese medicine in paediatrics and on Xiaoxiao's 14 years of specific experience.

Individual practitioners and teams are most welcome to collaborate with the project.

### Assisted reproductive technologies

The use of ART has been increasing over the past three decades, and in developed countries ART account for between one and three per cent of annual births. In IVF procedures patients undergo ovarian stimulation using exogenous gonadotrophin, which promotes the growth of multiple follicles to the preovulatory stage by interfering with the physiological mechanisms and normally ensures single dominant follicle selection. It is important to distinguish this from ovulation induction treatment, which aims to restore normal follicular growth in anovulatory women.

Current regimens are based on the administration of high doses of either urinary derived or recombinant follicle stimulating hormone (recFSH). The aim is to raise serum FSH levels above the threshold required for follicle development for a prolonged period, in order to enable the growth and maturation of not just one, but the complete cohort of follicles that have reached the FSH-dependent stage of development. In addition to FSH, luteinising hormone (LH) may also be administered.

Stimulation of the growth of multiple follicles leads to their production of supraphysiological serum oestradiol (OE2) levels, which by means of positive feedback at the pituitary may cause a premature LH peak and hence

premature luteinisation and ovulation. In order to prevent this, exogenous gonadotrophin treatment is usually supplemented by the administration of gonadotropin-releasing hormone (GnRH) analogues followed by desensitisation of the pituitary, resulting in gonadotrophin suppression and prevention of a premature LH surge. In contrast to GnRH agonists, GnRH analogues are immediately effective in reducing endogenous gonadotrophin production and their administration can hence be limited to the mid-to-late follicular phase of the menstrual cycle, so that less exogenous FSH may be required; they have become established in clinical practice.

An alternative approach is 'natural cycle IVF', aimed at aspirating the single oocyte that has developed during a spontaneous cycle.

Although ovarian stimulation has an important role in ART, it may also have detrimental effects on oogenesis, embryo quality, endometrial receptivity and perinatal outcomes. It is necessary to carefully reassess the safety of ovarian stimulation in the first generation of ART-generated children, who are now reaching adulthood.

### Children's physiology

The quality of our qi changes during the course of our lives. When we first come into the world, the qi that makes us up as individuals has yet to stabilise: young children are delicate, as we read in the classical texts when they say that their 'zangfu organs are tender and soft' (zang fu jiao ruo, 脏腑娇弱), their channel systems are still fragile 'qi easily loses its way' (qi yi chu dao,

Treatment is a sequence of around ten stimulations of paediatric tuina

气易出道), and childhood illness 'occurs easily and progresses and changes rapidly' (fa bing rong yi, 发病容易, 传变迅速). Growth is most rapid in the early stages of life, and requires such large amounts of qi that the spleen qi often cannot sustain such a load ('Spleen is insufficient in young children', xiao er pi bu zu, 小儿脾不足). Infancy corresponds to springtime, to dawn, to the rising of yang within yin, so that in children yang is at its maximum

potential compared with yin ('yin is insufficient in young children', xiao er yin bu zu, 小儿阴不足) and the powerful spring/liver qi easily becomes excessive ('Liver is often in surplus', gan chang you yu, 肝常有余).

However, it is equally true that children's qi and zangfu are still relatively clear of the disorders that pile up during a person's lifetime, which facilitates a swift return to a healthy state ('the spirit of the zangfu is clear, recovery of health is easy and rapid', zang fu qing ling, yi qu kang fu, 脏腑清灵, 易趋康复).

### Qi disorders

In babies conceived via ART we have to consider the heating nature mainly of ovarian stimulating hormones, and also of the treatments aiming to suppress premature luteinisation and ovulation. This extra heat could be seen as taidu, foetus toxic heat.

We should also take into account that a failure in getting pregnant may be related to the age of the mother and/or father, their state of health, and their daily habits such as diet, smoking, stressful

conditions. The egg, sperm and embryo manipulations to achieve fertilisation and implantation should also be mentioned. Life has a strong tendency towards health and balance, nevertheless all these conditions may influence the strength of the newborn's qi.

We can therefore recognise two main possible disorders of the qi system:

- heat: a qi that tends to move too much and needs to find more peace (manifesting as frequent awakenings and agitation, since the 'yin-quiet' side is overwhelmed by the 'yang-moving' side); the heat-fire tends also to burn (manifesting as constipation and/or skin rashes, since the heat injures smoothness)
- qi deficiency: a qi which struggles and needs a lot of attention (manifesting as slow growth, difficult sucking, diarrhoea, whining)



of disharmony involved and the attitude of the parents. We also advise on lifestyle habits, mainly with regard to food, sleep and rest.

We teach parents a sequence of paediatric tuina techniques specific to their child to perform at home. It supports the treatment done in the clinic and helps parents feel empowered to cope with the troubles affecting their children.

Xiaoxiao is also a teaching clinic where practitioners can develop their clinical knowledge of paediatrics.

Clinical data have been recorded in a specifically designed computer programme. This includes patients' personal details, initial and final evaluation of basic diagnostic data such as tongue, pulse, sleep, appetite, stools, skin problems, sweating, and conventional treatments. In 2012 we also started to collect photos of all patients' tongues (except babies).



More complicated patterns may develop, such as lung qi insufficiency and congealing of phlegm (for example respiratory disorders), kidney qi or jing insufficiency (for example hereditary diseases), food accumulation (for example abdominal colic, regurgitation), etc.

### Xiaoxiao Clinic

The Xiaoxiao Clinic of Chinese Medicine for Children has been active since 2005. We primarily use paediatric tuina, acupuncture and moxibustion, along with other traditional auxiliary treatment methods such as guasha, ear seeds and cupping. No predefined protocols are used and treatment selection depends on the age and characteristics of the child, the pattern

### Preliminary observational study

Objective: the aim of the study is twofold:

- examine the possible association of ART and infants' health conditions, evaluating pathological patterns according to CM diagnosis
- evaluate the effectiveness of treatment with paediatric tuina

**Participants:** children between the ages of four and twelve months conceived by ART (the specific procedure is specified in the 'technical chart'). They are sent by colleagues and by parents of children already treated at Xiaoxiao clinic. Pregnant women and recent mothers are also offered participation in the project, during a consultation or by email.

**Methods:** the study is multicentred and coordinated by Xiaoxiao Clinic. The practitioners are both acupuncturists and tuina practitioners; all of them have a specific training in paediatric tuina.

A 'paediatric chart' and a 'technical chart' have been designed to gather general health data and specific ART data. A questionnaire to evaluate anxiety is submitted at the first and last visits (perinatal anxiety screening scale, Department of Health, State of Western Australia, 2013).

Infants are visited twice, around the ages of four and twelve months, and paediatric tuina treatment will be given where necessary.

Both times they come for a course of six sessions, distributed over three months (the first three sessions in the first month, the next two sessions in the second month, and the last one after one month). A follow-up session takes place around the age of 18 months.

The children are evaluated through traditional Chinese diagnosis.

Treatment is a sequence of around ten stimulations of paediatric tuina, chosen according to the therapeutic principles for the individual condition, according to the Chinese 'main patterns'. The parents are taught the same sequence to be applied daily.

Paediatricians who do not apply paediatric tuina act as 'control group'. They visit the children at the same ages and gather the same data – through the 'paediatric chart', 'technical chart', perinatal anxiety screening scale, and follow-up evaluation – but do not treat the children with Chinese medicine.

**Results and conclusions:** expected after one year of preliminary observational report and will lead to design of a more specific study.

### Proposal of collaboration

The structure of the work is multicentred and participation of individuals and teams is most welcome. Sharing with our colleagues benefits both results and personal satisfaction in this wonderful work of treating children with Chinese medicine.

Elisa co-founded the School of TCM 'MediCina' and is a member of Milan Medical Board for Non-Conventional Medicine. She lectures all over the world and has published many articles as well as two books: *Shen – Psycho-Emotional Aspects of Chinese Medicine and Pediatrics in Chinese Medicine*.

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