

# The experience of a cardiologist and of an internist in taking charge and care of patients from other cultures from a gender perspective: The Yemen project

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**Summary.** This paper illustrates the experience of a cardiologist and an internist in Yemen, with snapshots from everyday life, both inside and outside hospitals. After outlining the main stages of Italy-Yemen cooperation, it describes the situation of Yemeni health care, with particular reference to its hospitals, the training of medical personnel and gender differences in the approach to male and female patients. It then takes into consideration certain aspects characterising the state of health of the Yemeni population, such as the extremely high incidence of rheumatic heart disease due to the total lack of primary and secondary prevention and gender differences in the treatment of women with acute coronary syndrome.

*L'esperienza di un cardiologo e di una internista nella presa in carico e nella cura di pazienti provenienti da altre culture, in una prospettiva di genere: l'esperienza in Yemen*

**Riassunto.** Viene illustrata l'esperienza di un cardiologo e di una internista in Yemen, con istantanee dalla vita quotidiana, dentro e fuori gli ospedali. Dopo avere ripercorso le tappe principali della cooperazione Italia-Yemen, viene descritta la situazione della sanità yemenita, con particolare riferimento ai suoi ospedali e alla preparazione del personale medico e alle differenze di genere nell'approccio alle pazienti e ai pazienti. Vengono poi presi in considerazione alcuni aspetti caratterizzanti lo stato di salute della popolazione dello Yemen, come l'altissima incidenza di cardiopatia reumatica a causa della mancanza totale di prevenzione primaria e secondaria e le differenze di genere nel trattamento delle donne con sindrome coronarica acuta.

*The article is written by LA with the exception of the paragraph entitled "A scientific and human experience", by VS.*

## Introduction

I went to Yemen for the first time in 2006 as part of a collaboration project between the School of Medicine of La Sapienza University in Rome and the School of Medicine of the University of Sana'a, and since then I have returned many times to Yemen always at the invitation of Yemen's Ministry of Health. This ambitious project has taken shape over the years thanks to the great organizational effort of Prof. Alberto Angelici, surgeon

at La Sapienza, Scientific coordinator of the University Cooperation Programme, who has been engaged for many years in collaboration programmes with a number of Middle Eastern and African countries. Within the scope of this project, many clinicians and surgeons from La Sapienza University in Rome have gone to work at the Al-Thawra Teaching Hospital in Sana'a, as well as in Aden and in other smaller settlements, among which the island of Socotra. Here, Prof. Angelici, assisted by Prof. Francesco Angelico<sup>1</sup>, nutritional expert and epidemiologist at La Sapienza, has opened one of the first medical dispensaries on the island, making a major contribution to improving health care in the country. At the same time, several Yemeni doctors have come to Rome to complete their specialised training at La Sapienza. During our last trip to Sana'a in August 2014, shortly before the outbreak of the civil war, we had the satisfaction of seeing that many chief physicians at the Al Thawra Modern General Teaching Hospital in Sana'a had been our students in Rome and were doing an excellent job.

## Italy-Yemen Cooperation

Collaboration between Italy and Yemen is long-standing and has always been very active<sup>2</sup>. Suffice it to say that the conservation of the painted ceilings of the Great Mosque of Sana'a was done by a group of Italian restorers from the Archaeological Conservation Centre. The Great Mosque is one of Yemen's most important monuments and among the most ancient in the Islamic world; the ceilings are a unique example for the quality and extension of the medieval wood carvings which are among the finest in the Arabian Peninsula. Now everything is on hold in the hope that all the work won't be lost. At one of Sana'a's public hospitals, while visiting the Haematology Unit, we had the pleasure of finding several pieces of equipment donated by Italian Cooperation. This project started in 2003-2004 thanks to the precious work done by Dr Fregonara who over the years has created a Central Blood Bank and a Centre for the preparation of blood products. Years ago, Prof. Angelici opened the "Mother and Child Health Center" in the old city of Sana'a, delivering health care to mothers and children

in the poorest part of the city. The polyclinic, run entirely by women, employs gynaecologists, paediatricians, dentists and biologists.

At the time of our last visit in August 2014, the polyclinic was in perfect working conditions and able to carry out its activities thanks to the huge organizational effort of Prof. Angelici with a direct participation of the City of Rome.

Yemen has always been a politically unstable country. The political situation however changed radically in 2011-2012, during the so-called "Arab Spring", when under the pressure of part of the population that occupied the main squares of Sana'a, Aden and Taiz for months and of the Gulf countries, President Abdullah Saleh left the country after being in office for more than thirty years. Since then the conflict between the Houthis, a Shiite minority rooted in the north of the country supported by Iran, and the Hadis, Sunnis mostly concentrated in the south and strongly supported by the Saudis, has become increasingly fierce. Then, in March 2015, Saudi Arabia, supported by a coalition of 8 Arab countries, started launching indiscriminate bombings all over the country to block the advance of the Houthis. Yemen is today one of the world's driest, most barren and poorest country. Already before the war, water supplies were running out also as a result of the absurd decision to uproot orchards, wheat and cereals to make way for plantations of Qhat, a sort of coca leaf that everyone chews continuously from sunset to dawn. It is the only country in the entire Arabian Peninsula not to have oilfields and the few wells are controlled by the President's family without any economic return for the civilian population. Before this war, one out of every five Yemenis suffered hunger, one out of three was unemployed. Each year, 40,000 children died before reaching 5 years of age<sup>3,4</sup>. Now we are talking about at least 10,000 deaths and millions of people on the brink of starvation. I currently have only sporadic contacts with my Yemeni colleagues and friends. They have sent me a list of very basic drugs that are lacking in Hospitals. The situation is dramatic and it is with great sorrow that I try to tell about this country that we love and where it is impossible to return to for the time being, providing an account of what it was like before the war.

## Hospitals

There is no "welfare" in Yemen, so all patients pay for hospitalisation. There are however huge differences in costs between State Hospitals and Private Hospitals. In the confusion of Yemeni hospitals, there are no gender difference as regards the beds; access to treatment is equal for men and women although a much higher percentage of men than women are hospitalised. I did



Mother and Child Health Care Center in Old Sana'a City set up and managed partly with funds from Italian Cooperation.



Nurses and doctors in the courtyards of the Al-Thawra Teaching Hospital in Sana'a.

not see gender or rank differences in the large Yemeni public hospitals, but the country's elite goes to hospitals entirely managed by non-Yemeni personnel. The most popular of these is the German hospital. In general, the majority of the population is very poor and is treated in government hospitals. Hospitals are sorts of fortresses and the entrances are guarded by armed soldiers. Now it is easy to understand. In July 2014, a few days before we arrived with Alberto Angelici for the last time in Yemen, a team of German surgeons was massacred during a surgical procedure presumably by groups linked to Al Qaeda to discourage any cooperation project. The hospitals have always been guarded even in less gruesome times. Each hospital building has a guard at the entrance to try to limit the huge flow of people. Once inside, there is absolute chaos. When the member of a family falls ill and is taken to hospital, the whole family goes with him. A patient's bed becomes a camp and the whole family lives with the patient day and

night. They bring cookers and they cook in the room. If the patient is a woman, she is kept under strict control. I have examined and performed diagnostic tests on several women and the routine is always the same. In a corner of the room, the husband, father, and brother stand there watching you sternly during the exam. It is not possible to freely examine a woman. You can touch or auscultate only a small portion of the female body and only if her man or her family gives you permission. Diagnostic exams are carried out by male or female physicians in premises reserved for women that are protected by heavy curtains. However, all of these strict rules apply only to women belonging to certain social classes. The poorest women often do not have men at their side and timidly let themselves be examined; they often do not even know their age and collecting their clinical history is almost always impossible. I have always perceived a feeling of great unease. While in the street women are largely veiled, in the hospital only some patients, the older women, have their face covered; bad health finally eases the strict religious rules and the need to be treated appropriately prevails. The ICU at Al-Thwara Hospital was directed in 2014 by an expert Yemeni anaesthesiologist and I did not see any difference in treatment between men and women. Patients, both male and female, are managed in the same way by physicians of both sexes. I have participated in several meetings on interesting clinical cases. The patient(s) and several doctors and students are always present. A young doctor presents the case, echocardiograms are done in real time and the coronary angiograms are projected.

They are usually the most serious cases, so all interferences or prohibitions vanish away, but great respect and attention toward women is always ensured. The discussion on the clinical cases is always very lively and the older doctors, most of whom are men, are well trained, since almost all of them have studied in Russia or in Eastern European countries. The female doctors always participate very actively in the clinical discussion, they almost all have their face covered and they cannot be greeted with a handshake; the young interns are more curious than their male counterparts, are more numerous and ask many questions. This fast dialogue looking only in the eyes of the speaker is an intense experience. The paramedics are almost all women and many of them are nurses from south-east Asia, so very few of them cover their face. While in Saudi Arabia women are really segregated from society and live in a world which is truly secluded, e.g., they cannot drive and they seldom cover leading roles, in Yemen women are relatively freer; they drive cars, run businesses, hospital wards, etc. Whether a woman covers her face depends on her education and age and very often their hair too is covered as well as their whole body to avoid



Mafresh.



Old Sana'a.

revealing the shape of their body on any occasion, unless they are at home. I have spoken of these rules with several female Yemeni colleagues of mine of different ages and the answer is always the same: these rules make them feel safer and therefore they are not a burden for them at all.

Despite the good training of the physicians, there are scarce economic resources both for diagnostic equipment and for drugs. For example, coronary disease patients undergo coronary angiography, but only later during these clinical meetings is it decided who can receive coronary stents. The chief needs to write a report and ask the General Manager of the Hospital for permission to use these devices which are quite expensive for Yemen. In patients with acute myocardial infarction, this



means unacceptably long pre-procedure waiting times which result in a very high incidence of post-AMI dilated cardiomyopathy.

### Rheumatic disease

The most striking thing in Yemen is the young age of the patients. There are so many young men and women with severe heart failure mostly due to rheumatic valvular heart diseases that were not diagnosed and treated in time. We immediately realised that the most important cardiology issue in Yemen is rheumatic disease. Few data are available on the prevalence, geographical distribution and age of onset of rheumatic carditis in Yemen. From October 1997 to March 1998, 5000 students of Sana'a, aged 5 to

18 years, were screened to evaluate the incidence of rheumatic disease<sup>5</sup>. Only the suspect cases were subjected to ECG, chest X-ray and echocardiogram. An incidence of 3.6 cases every 1000 subjects was found for the disease. Data from the south of Yemen<sup>6</sup> have shown a particularly aggressive impact of rheumatic carditis in this region with a high incidence among children and adolescents in both sexes. In Yemen, no programme for the prevention and treatment of streptococcal tonsillitis has even been organised in elementary schools. Therefore, many children develop severe rheumatic carditis already in adolescence. The more fortunate ones arrive in the few cardiac surgery centres operating in Yemen and receive an implantation of a mechanical valve device at an early age. Due to the country's socio-health problems, many do not follow an adequate post-implant anticoagulation

### A scientific and human experience

The first time I went to Yemen was in 2007. I went to establish contacts with doctors at the Al Thawra Modern General Teaching Hospital in Sana'a to start a research project on rheumatic heart disease. Rheumatic disease (RD) is an inflammatory disease secondary to a group A beta-hemolytic streptococcus (GABHS) oropharyngeal infection. From a clinical point of view, the disease is characterised by the involvement of the skin, joints, heart and central nervous system. Though arthritis is the most frequent clinical manifestation, the only permanent anatomic damage occurs in the cardiac valves that develop deformities resulting in stenosis or regurgitation which can lead to death due to heart failure even in very young patients<sup>7</sup>. While in industrialised countries, thanks to the widespread use of antibiotics, there has been a sharp decline in the incidence of RD, in developing countries the morbidity and mortality of this disease are still very high<sup>8</sup>. As rheumatologists, our interest in rheumatic cardiac disease is based on the fact that this disease represents the most convincing model for the development of an autoimmune pathology secondary to an infectious event; indeed, it is the only one in which the infectious agent has been identified with certainty<sup>9</sup>.

In Yemen, the incidence of rheumatic heart disease is very high due to the total lack of primary (early diagnosis and therapy for GABHS infections) and secondary prevention (recurrence of rheumatic fever with monthly administration of antibiotics for an extended period). Especially in the poorer groups of the population where socio-economic problems are extremely serious and health education is totally lacking, tonsillitis due to GABHS is not considered a pathology to be treated. Unfortunately, patients consult a doctor only when rheumatic valvular heart disease is at an advanced stage and causes obvious symptoms.

In addition to the obvious scientific interest, my experience in Yemen was enriched by coming into contact with

a culture that was completely unknown to me. I had already travelled to many countries before then, but never to an Arab country. So, this was the first time I approached a veiled woman, and obviously not as a tourist but as a colleague. At the beginning, feelings were very intense. Finding the right way to approach a culture that is so different and distant from ours was not simple.

I had initially interpreted the strict privacy of Yemeni women as a great distance between me and them, but after a short period of adaptation the atmosphere became warmer and they let me into the physicians' room, into their homes and into their feasts. And a world of contradictions opened up before me, the coldness made way for warmth and hospitality, but above all I was struck by the huge difference between the way people live outside (in the streets, at the hospital or in any case in front of an audience consisting also of men) and inside within their own rooms or homes where they spend their days only among other women. Laughter... jokes and an unexpected attention to aesthetics! One day, for fun, they dressed me in a chador and took me around the hospital and the funny thing was that everyone understood that I was the Italian doctor at first glance. "It's because of the way you move," my colleagues told me. "It takes more grace to wear the chador!" I have never managed to understand whether they themselves want to wear the scarf or whether it is imposed by religion. The female cardiologist I worked with for 3 consecutive years completely cut all ties after getting married. From 2007 to 2009 we had a great deal of correspondence, both personal and scientific, as we carried out our research and fostered our friendship. After her marriage, she no longer replied to my e-mails, letters or phone calls. Silence.

In addition to the scientific publications that we wrote together, I cherish warm memories of Yemen and of that experience that was so deep and full of wonder.

treatment so that the number of device failures is very high, as well as juvenile mortality. Over the years, we went several times to speak with the various Yemeni Health Ministers who have succeeded one another without any result, not out of lack of interest, but because of the serious socio-economic and organizational problems in the country. Apart from all the considerations on the severity of the disease, the social costs of a prevention programme in schools with a simple oropharyngeal swab are much lower compared to the cost of valves which often prove to be useless because they have been implanted too late and are poorly managed. To understand the organization of health care in this country, I visited several small medical facilities in the north of Yemen with Dr Saleh Atef, one of the cardiologists who completed his studies at La Sapienza University in Rome. We visited several towns in the Yemeni mountains. The clinics were decent but they had no chance of delivering care due to the chronic shortage of drugs and diagnostic equipment. The Ministry of Health does not have data on the actual incidence of this disease. For all these reasons, we have tried to organize a "Survey" on rheumatic carditis by networking several hospitals in Yemen. We provided them with a software to fill out on line to carry out an epidemiological study on rheumatic disease. We tried to monitor data entry from Rome but the results of the survey were scarce, and the study failed.

We then involved Prof. Guido Valesini, a rheumatologist at our university, who sent Dr Valentina Scalzi, an assistant of his, to Yemen to assess whether there is a particular predisposition to the development of rheumatic disease in this country.

### The Mafresh: A symbol of male separatism

I was invited to many Yemeni homes and even in the humblest ones I always found the "Mafresh". It is a room full of carpets on the floor, with many low windows and lots of pillows, often at the last floor of the magnificent earthen skyscrapers where the men meet friends, eat and chew the Qhat. The "Mafresh" is an exclusively male institution; sitting comfortably on the pillows, the Minister meets his collaborators, the Director General of the Hospital meets the various chiefs to discuss various organizational problems, friends meet, and all the conflicts are resolved after chewing Qhat. In a mountain village, after the visit to a small sleepy clinic, I was invited to a classic afternoon of "Qhat and Tea in the Mafresh" of a town elder; a group of armed men came, and they started telling hilarious stories that were kindly translated for me. The afternoon passed slowly, in a climate of great joy. Women are not allowed in the "Mafresh", they live in another wing of the house and the two sexes are segregated and this separation is very heavy for us Westerners.

In the house of a general in charge of the President's security, I found a traffic light in the Mafresh that signalled to the women of the house on when they could open the door...

### Ischaemic heart disease

Like all the countries with serious economic and social problems, Yemen too has a very high incidence of coronary heart disease as a result of poor monitoring of cardiovascular disease risk factors. Unlike rheumatic carditis, epidemiological data on ischaemic heart disease are numerous and relatively up-to-date. In fact, Yemen participated in the Gulf Registry of Acute Coronary Events (Gulf RACE), an international, multicentre, observational epidemiological study that enrolled 7390 consecutive patients suffering from acute coronary syndrome, hospitalised in 65 hospitals in 6 Persian Gulf countries in the period between October 2008 and June 2009<sup>10,11</sup>. At the La Sapienza University of Rome we analysed the complex Gulf Race database and we published the data relating to the treatment of acute myocardial infarction in Yemen in collaboration with Dr Munibari<sup>12</sup>. The results unfortunately confirmed our initial impression. Approximately two thirds of the patients with myocardial infarction come to the hospital >12 hours after the onset of the symptoms and are therefore not eligible for reperfusion. Therefore, hospital mortality is significantly higher compared to Western countries. Mortality rises further at 1 month and 1 year of follow-up. Yemeni patients with myocardial infarction are young, mostly men, with a high incidence of smoking and the use of Qhat. Conventional risk factors (hypertension, diabetes, dyslipidaemia) are less present in Yemen. Another important work of the Gulf RACE<sup>13</sup> research group has clearly demonstrated that there are substantial differences in the treatment of women with acute coronary syndrome in the Persian Gulf countries. A lower percentage of women than men receive therapy with ACE-inhibitors, aspirin, clopidogrel, beta blockers and statins. Women also undergo a significantly lower percentage of coronary angiography, revascularization procedures and in general reperfusion therapy compared to men. Women are at higher risk of hospital mortality and circulatory failure. The mortality rate at 1 month and 1 year is significantly higher in women than in men (11% vs 7.4% and 17.3% vs 11.4%, respectively;  $p < 0.001$ ). These differences in management largely explain the poorer prognosis in women. Finally, in a recent paper from the Gulf CARE registry<sup>14</sup> we clearly demonstrated how dramatic is the incidence of heart failure in young Yemeni population.

This is the dramatic picture of the situation in Yemen before the start of the Saudi bombing campaigns. The

ports and airports are now closed and the available drugs are scarce. As Andrew Cockburn<sup>15</sup> wrote on Harper's Magazine, we are facing a humanitarian disaster that the West seems to ignore. My thoughts go to my many friends among the doctors and university professors I worked with during those years, to the many bright eyes of young people in the ancient streets of Sana'a, and to the smiles and niceties that I received over these 10 years of work in Yemen.

## Conclusions

Before the current tragic armed conflict, Yemen was a model of Islamic society with strong tribal traditions but with a substantial tolerance for less coercive models and religious absolutism. In particular, as regards gender differences, though the use of the burqa is very widespread and especially in rural areas there is a substantial separation between the world of men and women, women are still protected and are starting to access the job market and the world of health care on an equal footing as men. Especially among younger generations you can feel a slow yet unstoppable drive for emancipation. The relationship between men and women is and will still be very different from the Western world for a long time, but I have met so many determined, well-trained women who above all are very respected in the workplace. Unfortunately, the war has interrupted this slow path and now the main concern for the Yemeni people is to survive the bombings and the critical shortage of food and medicines.

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