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# La Qualità e le Qualità In Medicina Generale

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## Telemedicine
## Etical and deontological implications

**Mario Baruchello**

According to the European Commission, the definition of telemedicine is patient and personnel integration, monitoring, management and education, using a system that allows prompt access to professional advice and to patient information, no matter where the patient and information is located. The clinical applications of telemedicine are many and constantly developing, from cardiology with ECG transmissions, to computerized diagnostic imaging, from dermatology with digital images of skin lesions to pneumology with severe COPD monitoring in oxygen-therapy. Every medical field can take advantage of this useful and efficient tool to improve its clinical action, from teaching to practical training.

All you need is a cellular phone to transfer data from a portable ECG device to a monitoring centre, allowing a real-time remote diagnosis system from home. Currently, distance learning and research also uses remote data transmission technologies to transmit and receive data.

Applying telematics in the medical field, means responding promptly to diagnostic (tele-diagnosis) and therapeutic (tele-assistance) needs of those citizens who live far away from a Hospital or those who are unable to leave home for a number of reasons. It is particularly useful because it offers a safe and valid answer to chronic patients and elders, and it represents a very important support in case of an emergency (tele-emergency). It favours continuous education (tele-training) and an interactive connection between doctors (video-tele-consulting) with a dynamic sharing of information, computerised clinical records, diagnostic reports, biomedical images, that "move" in real time with maximum definition.

Last but not least, telemedicine is a useful modality of practicing Medicine, using computer assisted and telecommunication devices, which elaborate, file and transmit, but always counts on the GP's judgement and comment. There are at this time some projects and trials in progress, ideas being developed, but still in a fragmented frame, with a local diffusion, and no precise purpose. Unfortunately, we are heading for the future in a "patchy manner" and above all GP is marginalized: too many choices with a high complexity level, very expensive costs, both in management and structures, which in the end must require high skills in HCTA (Health Care Technology Assessment).



There are some relevant regional initiatives, but always disconnected, therefore it is very difficult to understand what programmes have been arranged to give the same rules to the Local Health Authority and local Hospitals and to put in practice activities and performances of clinical telemedicine, especially in the case of home care.

In the Veneto region, the Telemedicine Consortium, acting as an Observatory by performing systematic surveys on telemedicine applications was founded in October 2005. It currently groups all the 22 Local Health Authorities afferent to the Veneto Region for all aspects

of telemedicine. Among the founders were 22 hospitals, which embraced the project. Although the question is: what role does GP have?

The Italian Minister for Public Administration and Innovation, Mr Brunetta, declared that in June 2010 all the GPS will be network connected, on a computer based system: there are over 55.000 doctors already and 40% of them are already in the net.
What debate do we face every day in our job?

We are very conscious about the problem of the protection and privacy of personal and sensitive data concerning our patients, when dealing with the net. We as GPs, are professionals that see in our everyday job, a real and true relationship, based on trust that doesn't hide behind a "formal informal consent" exerting an advocacy for our patients.

But is the patient's personal and clinical data truly respected in the Italian Health Care System? Since 1973, there are always updated statements, from the WMA Health databases. http://www.wma.net/e/policy/c9.htm

It would be great if these debates were discussed further and more often. We, in the role of GPs, must be aware of and "defend and protect our patient's life, their health, their rights, their privacy and their human dignity", according to the Declaration of Helsinki.
In the following issue of QQ, there are two articles that prove that among very caring and organized doctors, there is always a chance to improve skills and competences in a better way, especially using the telemedicine.

To begin with, Net- Kidney, a clinical study conducted by 34 GPs in a trial of 44.000 patients, makes us realize how we improved the database archives, in the early diagnosis of kidney diseases.

Second, using telemedicine it's easy to acquire the Serum creatinine report, allowing us to elaborate more secure and precise data therefore, diminishing the variability of opinions between doctors.

The clinical study Net – Coeliac disease carried out among 33.000 patients, confirm the underestimation of significant issues in our professional practice, which could simply utilize computer-based programs.

Numerous surveys prove that only 16-20% of Italian GPs truly and seriously practice preventive medicine, based on initiatives and opportunities, while more than 50% of them do not even know the meaning of this. (Bignamini AA.Indagine QPol 2001 Simg – M. Milano. E tu, come ti sei organizzato, ed. Il Sole 24 Ore, 2008 ).
Telemedicine could possibly be a future reference in our job, if only some of our teams could find the time and will to dedicate, we could revise our clinical records humbly. Finally we could implement old computer softwares and keep in order our data in the net.

Last but not least, we are proud to celebrate the 8$^{th}$ anniversary of NET AUDIT, a successful experience that has the luck to continue, thanks to the committed work many professionals involved.

## Net-Kidney: Cockfort and MDRD formula evaluation in GP before and after the introduction of an automatic method in computerized clinical records of the Netaudit GPs

**Carmine Farinaro** (CE), **Giampiero Bastianon** (VI), **Giuseppe Belleri** (BS), **Florio Faresin** (VI), **Enzo Brizio** (CN), **Francesco Del Zotti** (VR) e **Lista Netaudit** (http://www.netaudit.org)

In Italy we are assisting an increase of new cases of terminal renal failure and consequent expensive programs of *chronic haemodialysis* (approximately 40 thousand per year). These results are quite predictable, through an early detection of the first kidney damages. On the other side it's clear that patients with the first signs of nephropathy have a significant increase of cardiovascular risk, yet this risk is reversible if safety measures have been taken in time (smoking, healthy nutrition, drugs, close monitoring). Actually, when a patient has an early renal insufficiency with a *creatininemy* of 2 mg/dl, it takes averagely 5-6 years to reach uraemia. In these cases a multifactorial approach may slow down the passage to renal insufficency (Gambaro, 2005)

### EARLY DIAGNOSIS

The simple serum creatinine test is the 1st step to establish a suspect of nephropathy.
On the other side, creatinine clearance tests are continuously decreasing, both for patient logistic difficulties and for the many analytic variables that can invalidate the results. In the last years to establish a suspect of nephropathy and attribute the single patient to the various CKD classes (Chronic Kidney Disease), we have found formulas that are not only creatinine-based or based on a lab clearance, calculating the glomerular filtration rate (GFR): The **Cockfort** formula, (which expects the weight in the clinical record) or a new formula, the **abbreviated MDRD**.
The MDRD only needs age, gender and ethnical group for the calculation, data that is generally present in a GP's database. Therefore, respect to eventual lab clearance data insufficiency, or a traditional calculation (Cockfort) inside a clinical record, there could be a solution: using during a visit or outside a visit (extracting it from all patients with serum creatinine in the database) the abbreviated MDRD formula.
There is another advantage: according to recent evaluations, the reliability of the MDRD formula seems greater respect to the Cockfort one in obese patients, with water retention and because of the GFR values, which indicate a kidney damage, for those lower than 60 (Traynor, 2006).

A last explanation is however necessary: the above-mentioned formulas have validity for patients above 18

years of age. Under that age we must apply other formulas.

## AIMS

GPs of the Netaudit List

a) in the first phase they found, for a period that goes up to the end of 2005, a number of patients over 18 with at least 1 serum creatinine numerical value; having Nephropathy or Renal Insufficiency ICD code; with last clearance measured or calculated (using the Cockfort formula) in the clinical record.

b) in the second phase they found, applying automatic formulas on the entire database up to 31 December 2005, how many patients in the same age group or over 18 had in automatic a Cockfort formula and an abbreviated MDRD (using the last serum creatinine values and weight found in the clinical record);the number of cases with MDRD<60 and Cockfort<60 and last but not least, patients with one of the two values <60. Later they evaluated, respect to the first phase, the increase in the number of patients with CKD (calculated clearance <60) obtained with the application of the COKFORT and MDRD formulas on all patients with at least one *creatininemy*.

## METHOD

• The participants conducted a first extraction of patients with serum creatinine and with an SQL automatic application of the Cockfort and Abbreviated MDRD formula procedures (or similar) in the entire database, up to 31 December 2005.

• The participants checked those serum creatinine values that were particularly abnormal (mainly in millimoles) and corrected the data translating them in milligrams, applying the constant 88.4; moreover, in black patients, they multiplied the result with the constant 1.21)

• In the end, the participants filed a web field where the end results were inserted.

**RESULTS of the first phase**: Table 1 (footnote)

34 GPs participated with 44044 patients, equal to an average of 1295 patients per GP.

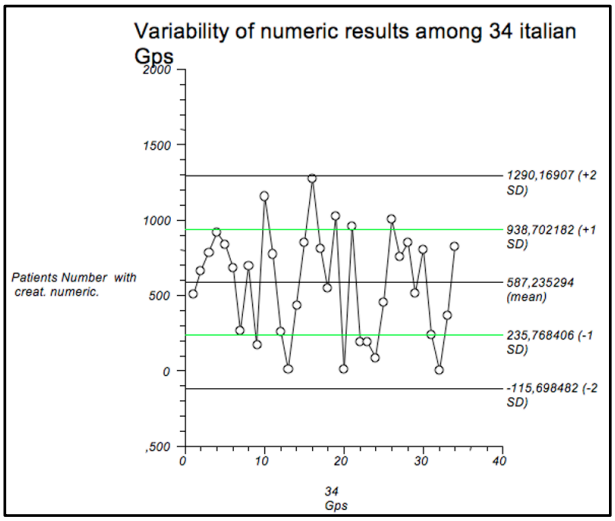



**Fig. 1**

Serum creatinine numeric values in clinical records (**Figure 1**): overall 19996, equivalent to 587.2 serum creatinine at least once in the clinical record (less than half of the patients), with great variability among the GPs: variation coefficient 59%, minimum 3 and maximum 1276, and difference 25°-75° interquartile range equivalent to 258-540.

Clearance measured in the lab: 1664, equivalent to an average of 48.9 per GPs (SD 158); here too we found a great variability (range 0-90; median difference interquartile range 3-38).

COCKFORT in the clinical record: average of 14.9 (SD 45.8) per GP; regarding the variability it goes from minimum 0 to 258, interquartile range 0-9.

The number of patients with a measured or calculated clearance recording (Cockfort): 13.8 per GP (SD 22.9; range 0-128; interquartile range 3-17)

The number of patients coded in their clinical record as CRI-9 codes of Chronic Renal Insufficiency (CRI) is in average 16.4 (SD 17.3; range 1-90; interquartile range 5-18)

**RESULTS of the second phase**: Table 2 (footnote)

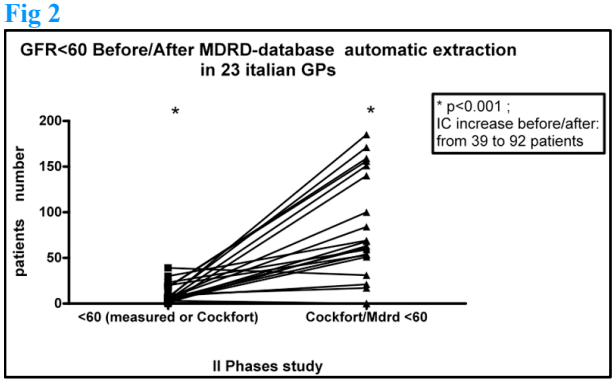
29 Netaudit GPs participated with an average of 1390 patients. In this second moment the Netaudit GPs were invited to study in-depth the application of the Cockfort and the potential use of the MDRD formula, which isn't currently present in most of the GP's clinical records. GPs were supplied with (Sql) procedures to automatically extract the calculation of the Cockfort and abbreviated MDRD formulas. Table 2 puts in evidence in particular the following data:

a) a relative numerical predominance of MDRD respect to Cockfort (in average 509 MDRD respect to 405 Cockfort);

b) an average of 85.4 Cockfort or MDRD lower than 60 (per GP), with a certain variability among GPs (SD 57.7; range 0-194; interquartile range 129-51)

Use of the automation for the calculation of the MDRD formulas in the entire database of the 22 GPs: comparison before/mouth ulcersr

**Fig 2**




22 GPs participated in both phases; for these GPs it was possible to calculate the number of patients with a compromised kidney function (GFR <60) before and mouth ulcersr writing Sql phrases for the calculation and extraction of all the Cockfort and MDRD formulas in patients with a numerical value of serum creatinine in their clinical records. The diagram demonstrates an important increase in finding patients with a compromised function in the post-extractive phase (*Paired t test p<0.001 and CI at 95% of the increase between 39 and 92 cases more)*

## CONCLUSIVE COMMENTS

Our study supplies data that supports the concrete possibility of increasing electronic functionality test recordings (e-gfr) in clinical records. A "full" use of periodic extractions from the whole database – in a Booleana and Sql logic – could make the difference and identify how many have an e-gfr lower respect to known thresholds. A propos this realistic aim, we cannot hold back strong limiting factors. Our data in particular proves an excess of variability of the prescription and most of all in the numeric serum creatinine value recording. This is a problem that has already been analysed in previous studies (Del Zotti et al. 2008; Minutolo and coll. 2008). Actually answers such as "n" (normal) or "p" (pathological), favoured by software automatisms, prevent the precious introduction of numeric values on a continuous basis, on which an automatic calculation of the Cockfort or MDRD formulas is possible. Without a numeric value there are also other negative effects: in particular that of not being able to follow in time serum creatinine, which has tricky "numeric" characteristics. I.e. a worsening of the value by 15%-20% can slip because of the compressed range of the serum creatinine values that gravitates around "small" numbers: 0.5-2 milligrams.

There is another class of limiting factors tied to informatics: in particular we should highlight the frequent absence of the most recent MDRD formula in the most used GP softwares. Some Netaudit GPs have solved the issue creating an "MDRD" test ex-novo. Some Netaudit GPs have also introduced in the routine examination protocols also the Cockfort and MDRD formulas that are viewed systematically only on video when serum creatinine tests are prescribed, ready to receive the relative calculation of the future serum creatinine result.

Moreover, we must remember that the e-gfr assumes that: serum creatinine values must be somehow "methodologically" comparable. A way to solve the problem is in the difficult combination between making patients carry out the test always in the same lab and filing it in the clinical record adding the name of the lab. However, the reliability of the egfr will increase only when there will be a standardization of the serum creatinine test methods in the different labs (Myers et al).

The last thing we must highlight regards our profession: there are still to many different behaviours among GPs. The way the numeric data is filed is still absolutely unsatisfactory. Probably specific training courses will be able to make GPs understand how important it is for patients with a nephrological risk, to have in their clinical records their weight and how the serum creatinine filing accuracy and it's monitoring is fundamental; never as in this field, can an effort in GP produce a muliplying effect on quality.

## GPs that adhered to the first phase

ARZENTON Ermanno, AUGRUSO Angelo, BARUCHELLO Mario, BASTIANON Gianpaolo, BRASESCO Pierclaudio, BRIZIO Enzo, CAPUTO Stanislano, CIOLINA Giovanni, DALLA VIA Attilio, DE BARI Antonio, DE MOLA Cosimo, DEL ZOTTI Francesco, DELUIGI Gianni, ERRICO Cosimo Giuseppe, FARINARO Carmine, FRANZOSO Federico, LIPPA Luciano, LIPPOLIS Orazio, LUPI Lorenzo, MAGLIOZZO Francesco, MARULLI Carlo Fedele, MERLINO Giovanni, NEBIACOLOMBO Cristina, PAOLINI Italo, PASCULLI Domenico, RANZANI Luca, SABBI Diego, SCALA Antonio, SCHIANCHI Paolo, SEREN Filippo, TEDESCHI Luca, TORTI Giorgio, VALENTE Biagio, ZADRA Alessandro

## GPs that adhered to the second phase

ANDREOLI Claudio, ARTEBANI Adriano, BASTIANON Gianpaolo, BELLERI Giuseppe, BIANCHI Cristina, BRASESCO Pierclaudio, CAPUTO Stanislano, CARACENI Luciano, FARESIN Florio, FATIGATI Domenico, FRANCHINI Carlo Andrea, FRAPPORTI Guglielmo, GIANNOBILE Filippo, LOGLIO Adriana, MAZZI Marco, PASQUATO Paola, PIERANTONI Abramo, QUATTROCCHI Piero, RIGON Giulio, RUBICINI Giuseppe, SFRAGARA Ignazio, SIMIONI Giuliana, STORACE Sara, TOMBESI Massimo, TOTA Maria Fiorenza, VAONA Alberto, ZADRA Alessandro

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# Net-Coeliac: audit on the requirement for at least one antibody for coeliac disease in patients with coeliac index-factors in their clinical

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## INTRODUCTION

The prevalence data regarding coeliac disease in the overall general population are very heterogeneous, varying, among the different casistics, from 1/1500 to 1/100 people. This variability could be correlated both by the very few specific studies carried out in the GP setting and by the extreme heterogeneity with which the pathological history manifests among adults. In fact, only in a very small percentage, the symptomatological procession is attributed to the classic gastrointestinal presentation, while in most cases the initial symptoms are vague and not well (i.e.: general illness, asthenia, slight anemia, slight increase of the transaminases, etc).
This involves, besides the difficulty of a diagnostic definition, a long latent period between the moment the symptoms appear and the forumlation of a final diagnosis, with an inevitable endangerment of the patient's life quality. Our study proposes a method called "*suspect-case finding*", which starts from a retrospective individuation of all patients that come to a GP with a determined symptomatological and/or lab history and/or where there are pathological histories considered "at risk" for the development of the disease. The method applies an extraction protocol from the GP's DATABASE. Once found the criteria for the first suspect, it is easier to *make a screening,* i.e. following a flow-chart like the one in the link : http://www.netaudit.org/coeliaco/celiak-case-find.pdf

## AIMS

The general aim is mainly to obtain the following Totals and Reports, useful for a first evaluation of sensitivity towards the celiac issue:
A) Find the number of non-coeliac patients belonging to any age group, with at least one risk factor of (see the list below), respect to the total number of assisted patients.
B) Respect to this denominator (the number of patients with at least 1 risk factor) find the number and proportion of the patients that have carried out at least once one of these 3 screening tests: a) *Antitransglutamin* antibody; b) antiendomysial antibody; c) antigliadine antibody
C) carry out an evaluation of the subgroup at major risk: number of non-celiac patients belonging to all age groups, with at least 2 risk factors (see the list below), respect to the total number of assisted patients.
D) Respect to the denominator at point C (number of patients with at least 2 risk factors) find the number and proportion of the patients that have carried out at least once one of these 3 screening tests: a) *Antitransglutamin* antibody; b) antiendomysial antibody; c) antigliadine antibody

## METHOD

We evaluated the above objectives in the entire database of each GP up to 10/30/2007. To extract the database having a SQL model we supplied an automatic procedure written in SQL language. The index-factors for coeliac disease originated from Table 1:

**TABLE 1: Risk factors to evaluate to determine the denominator of patients with 1 or more index-factors:**

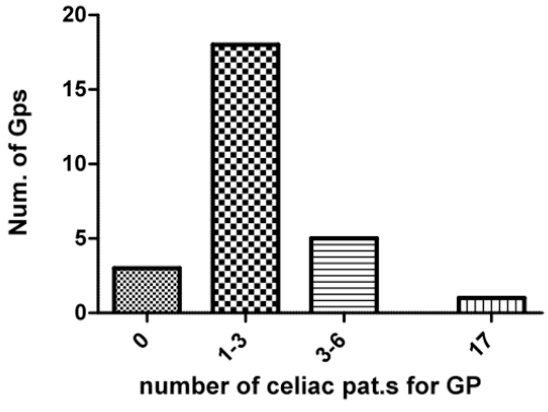
a) Haemoglobin <11,5 for females; <12,0 for males
b) SKINNINESS (BMI<18.5 for patients over 18; for patients over < 18 we found a problem: GP softwares generally DO NOT supply BMI PERCENTILES therefore, they don't systematically define under-weight conditions; for this reason we limited ourselves in transforming the BMIs <18,5 obtained from the extraction of our database in BMI PERCENTILES per age/gender including only BMI percentiles lower than 15%. To transform the BMI percentiles we used the web-calculator found in the following link:http://www.kidsnutrition.org/bodycomp/bmiz2.html
c) ALT > 60
d) recurrent mouth ulcers OR aphthous *stomatitis*
e) Herpetiform dermatitis
f) Irritable bowel syndrome
g) Diabetes Type 1
h) One of the following autoimmune diseases: *Hashimoto's* Thyroiditis; Graves' disease; Addison's disease
i) Connectivitis (one of the following: Sjogren's syndrome, Systemic Lupus Erythematosus, Rheumatoid Arthritis, Polymyositis, *and Scleroderma*)
l) Chromosome diseases (one of the following: Down syndrome; Turner Syndrome)

## RESULTS

**(table a pag. 8 and figure 1, 2, 3 at pag. 6)**

The study was completed by 26 Italiani GPs, which have overall 33829 patients, with an average of 1301 patients per GP. The GPs assist overall 71 patients that are already defined as coeliac, with an average per GP of 2.7 coeliac (SD 3.3; minimum 0; maximum 17). The group had overall 77/33829 coeliac patients, equivalent to 2 ‰ (CI between 1.6 and 2.6 ‰).

Fig. 1




**Patients with at least 1 risk factor (not defined as coeliac)**

892/6136 (14,5%) patients respect to the Denominator (D1) of all patients not defined as coeliac and with at least 1 index-factor have in their clinical records at least one of these 3 antibody tests (*Antitransglutamin* antibody; antigliadine antibody; antiendomysial antibody). There is a broad variability respect to the percentage per single GP of patients with at least 1 antibody: minimum 2%; inferior quartile 5,4%; median 7%; superior quartile 10,1%; maximum 88%.

**Patients with at least 2 risk factors (not defined as coeliac)**

329/1168 (28,2%) patients have at least 1 antibody for coeliac disease, respect to the Denominator of all patients with 2 or more risk factors. Also in this case there is a broad variability: minimum 8,3%; inferior quartile 9.4%; median 15.2%; superior quartile 22.1%; maximum 86.7%. These are higher percentages respect to patients with at least 1 risk factor, but always substantially at acceptable minimum thresholds by 50-60%.

**Differences between averages and medians**

The evaluation of medians and averages (fig. 2 and fig. 3) shows a discrete differenze that is mainly due to a GP with a high percentage, which makes the overall averages soar: the participating GPs, with "outlier" percentages over 80%, and GPs that are specialists in gastroenterology.

However, the general trend is that the participating GPs highlight insufficient screening and diagnostic processes in this field.

Fig 2

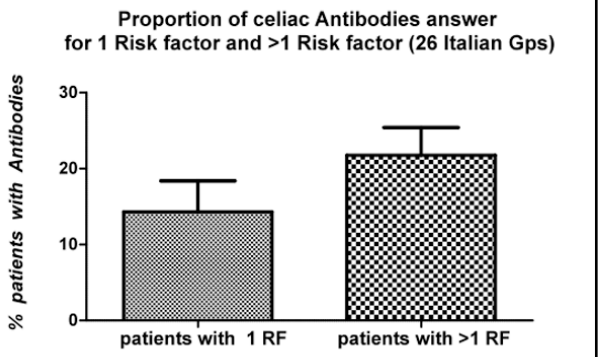
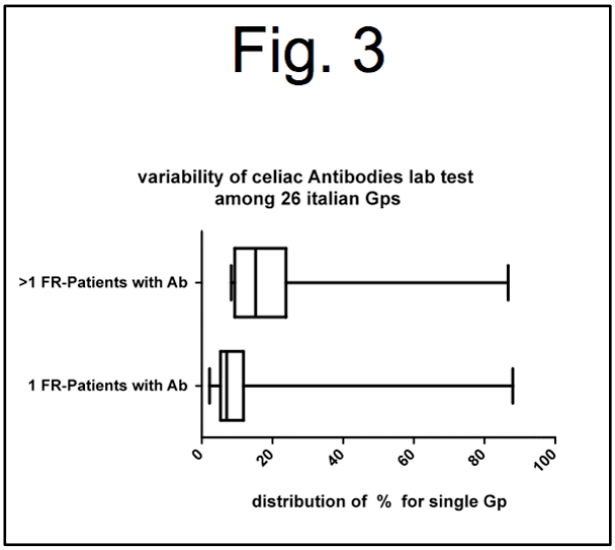



Fig. 3




## CONCLUSIONS

Concerning the prevalence of the coeliac disease our study demonstrates what we already knew regarding the insufficient diagnostic processes of coeliac disease: the prevalence we found was 0,2 %, while more rigorous and recent studies talk about a prevalence that is 5 times higher than 1%. A more precise confirmation of our underestimation comes from the evaluation of patients that should be screened seen the presence of at least one or two risk factors: patient median of those who have in their clinical records at least one antibody to individuate a coeliac disease is – respectively in the two groups, only 7% and 15% of the patients. What are the reasons for this deficiency? A discussion among the participants and the evaluation of litterature helped us find some causes:

a) an underestimation of the epidemiology and an unprecise knowledge of the micro risk factors (Menardo et al, 2006; Zipser et al, 2007);
b) focus only on diarrhoea and an underestimation of the role of an irritable bowel syndrome;
c) an underestimation of common factors (i.e. a slight sideropenic anemia or asthenia or hypertransaminasemia) as index-factors;
d) an insufficient knowledge of the great value of antibodies and certain tests for coeliac disease (in particular: *antitransglutamin* antibodies both IgA and IgG), and simple yet powerful diagnostic flow-charts.
From what we just discussed we found some possible solutions for the future:
A) always keep in mid and on our desk or desktop a list of risk factors, which can be grouped in certain categories: autoimmune disease; under-weight conditions and anemia; common symptoms/syndromes as asthenia, mouth ulcers, spastic colitis, hypertransaminasemia; chromosome diseases.
B) always have access to that simple yet powerful flow-chart to prescribe those few tests that are needed (i.e: http://www.netaudit.org/coeliaco/celiak-case-find.pdf
C) have continuous access to "*The Rome Criteria*" for the diagnosis of the irritable bowel syndrome.
D) periodically extract from our database with automatic boolean or SQL phases (similar to those used in our offices) those patients with risk factors and evaluate which among those don't yet have antibodies.
If we follow these simple steps we can obtain, within a few months an absolute number of GPs that is triple or even quadruple. Then, after reducing the "diagnostic" work, there will be new relational scenarios (see the case report at the end of this article) or dietary (see the increased risk of the flourishing "market" of foods for coeliac patients that have diets without glutens but at times rich in fats). And, as usual, we'll see that audits and researches in GP don't make us work less, but simply shifts the levels and complexities of the problems. And the coeliac disease grants us a matchless occasion.

## NET-COELIAC PARTICIPANTS

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# From the audit on coeliac disease to a "new" diagnosis in long-standing patients: relational vertigo and stimulating professional challenges


**Francesco Del Zotti** (MMG – Verona)


At times Netaudit induces us to improve diagnostic processes in a field that had very little investigations before the audit. Our Audit on coeliac disease made us discover a new disorder in old patients... It happened in more than one circumstance. Some patients known to us for years as "frequent attenders" or as "skinny" or colitic all of a sudden became "coeliac". In that moment we compliment ourselves as GPs (*Netaudit pushed us to improve the diagnostic process and to use new tests*); but, at the same time, we look at the consolidated relationship with a new anxiety. In relating with the patient we have known for a long time with this "new" diagnosis of coeliac disease, among glances and half sentences we see a question: "*could we have discovered this problem before?*". Well, our "methodological insistence" was awarded, but our probable delay highlighted.
Again, the diagnosis will make the patient feel better: it's always good that it has been discovered and that the GP had a decisive role in this. Only that this role is once again tied to the ability to "grant" our patients and ourselves new challenges, useful yes, but also troublesome. The only consolation: inconveniences prevent laziness and keep us "exercised" and young, well at least professionally.

## TO CARE

**Stefano Alice** (MMG - Genova)

An elderly man came to the office to remove his sutures: he insisted to be visited before his turn: "I'm in a hurry because I have an appointment at 9.00". I made him sit down, knowing an hour would have passed before somebody would have seen him in my group medicine team. He kept looking at his watch and since I had nothing else to do, I asked him if he wanted me to help him. While I was removing the sutures, I asked him if he had an appointment with another doctor. He explained he had to go to a clinic to have breakfast with is wife, and said she was affected by Alzheimer's disease for a long time. I asked him if she usually got worried if he was late. He answered that it was 5 years that she didn't recognized him anymore. I was surprised and asked him: "You go visit her every morning even if she doesn't know who you are?". The man smiled and tapping my shoulder said: "She doesn't know who I am, but I still perfectly know who she is!".



| | Gps | Sum | Mean | SD | Max | Upper quart. | Median | Lower quart. | Min | Range |
|---|---|---|---|---|---|---|---|---|---|---|
| patients (pat.s) number | 26 | 33829 | 1301.1 | 258.8 | 1588 | 1500 | 1355.5 | 1127 | 494 | 1094 |
| celiac patients for Gp | 26 | 71 | 2.7 | 3.3 | 17 | 3 | 2 | 1 | 0 | 17 |
| Not-celiac patients with at Least 1 Risk Factor (RF) - D1 | 26 | 6136 | 236.0 | 141.4 | 655 | 297 | 188.5 | 150 | 46 | 609 |
| Number of pat.s with at least 1 RF and with at least one of 3 celiac Antibodies (Ab) - n1 | 26 | 892 | 34.3 | 78.0 | 410 | 26 | 16 | 9 | 3 | 407 |
| Not-celiac patients with at Least 2 Risk Factors - D2 | 26 | 1168 | 44.9 | 50.2 | 210 | 47 | 29.5 | 20 | 6 | 204 |
| Number of pat.s with at least 2 RF and with at least one of 3 celiac Antibodies (Ab) -n2 | 26 | 329 | 12.7 | 35.0 | 182 | 6 | 4 | 3 | 1 | 181 |
| (n1/D1)*100 | 26 | ---- | 14.5% | 20.7 | 88% | 10.1% | 7.05% | 5.4% | 2.2% | 85.8% |
| (n2/D2)*100 | 26 | ---- | 21.8% | 18.6 | 86.7°% | 22.2 | 15.2% | 9.4% | 8.3% | 78.4% |

**Net-Celiachia - Tabella**

| Title | Valid data | Sum | Mean | SD | Max | Upper quartile | Median | Lower quartile | Min |
|---|---|---|---|---|---|---|---|---|---|
| clear<60 (measured or calculated) | 34 | 469 | 13,79 | 22,88 | 128 | 17 | 6,5 | 3 | 0 |
| at least 1 cockfort value | 34 | 509 | 14,97 | 45,75 | 258 | 9 | 0 | 0 | 0 |
| clearan--lab-measured | 34 | 1664 | 48,94 | 158,39 | 940 | 38 | 21 | 3 | 0 |
| creat-numeric value | 34 | 19966 | 587,24 | 351,47 | 1276 | 840 | 673 | 258 | 3 |
| IRC (CKD) | 34 | 558 | 16,41 | 17,31 | 90 | 18 | 14 | 5 | 1 |
| Patients Number | 34 | 44044 | 1295,41 | 243,72 | 1593 | 1500 | 1327,5 | 1080 | 755 |

**Net-rene - Tabella 1**

| Title | Valid data | Sum | Mean | SD | Max | Upper quartile | Median | Lower quartile | Min |
|---|---|---|---|---|---|---|---|---|---|
| Cockfort or MDRD <60 | 29 | 2477 | 85,41 | 57,70 | 194 | 129 | 69 | 51 | 0 |
| mdrd<60 | 29 | 1753 | 60,45 | 32,41 | 126 | 79 | 61 | 38 | 0 |
| cokfort<60 | 29 | 2064 | 71,17 | 50,05 | 192 | 100 | 63 | 38 | 0 |
| MDRD | 29 | 14768 | 509,24 | 307,03 | 1036 | 699 | 572 | 316 | 0 |
| COCKFORT | 29 | 11751 | 405,21 | 288,66 | 1007 | 584 | 352 | 179 | 0 |
| patients Num. | 29 | 40304 | 1389,79 | 517,88 | 3834 | 1500 | 1370 | 1200 | 782 |

**Net-rene - Tabella 2**