Actualización de la evidencia científica en cribado de cáncer

XIX Reunión Red de Programas de Cribado de Cáncer

Lanzarote, 11-13 de mayo de 2016

MAMA

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The NEW ENGLAND JOURNAL of MEDICINE

SPECIAL REPORT

Breast-Cancer Screening — Viewpoint of the IARC Working Group

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Annals of Internal Medicine

VIEWPOINT

A Public Health Framework for Screening Mammography

Evidence-Based vs Politically Mandated Care

JAMA Published online January 18, 2016

Last year, in draft form the USPSTF again provisionally recommended biannual screening for women beginning at age 50.[1] Yet, on December 18, included within a $1.15 trillion fiscal year (FY) 2016 Consolidated Appropriations Act (HR 2029), Congress again required the use of USPSTF's 2002 guidelines. In other words, a political body required the DHHS to follow outdated scientific

Case–control Studies on the Effectiveness of Breast Cancer Screening

Insights from the UK Age Trial

Daniëlle van der Waal,[a] *Mireille J. M. Broeders,*[a,b] *André L. M. Verbeek,*[a] *Stephen W. Duffy,*[c] *and Sue M. Moss*[c]

(*Epidemiology* 2015;26: 590–596)

Background: Ongoing breast cancer screening programs can only be evaluated using observational study designs. Most studies have observed a reduction in breast cancer mortality, but design differences appear to have resulted in different estimates. Direct comparison of case–control and trial analyses gives more insight into this variation. Here, we performed case–control analyses within the randomized UK Age Trial.

Methods: The Age Trial assessed the effect of screening on breast cancer mortality in women ages 40–49 years. In our approach, case subjects were defined as breast cancer deaths between trial entry (1991–1997) and 2004. Women were ages 39–41 years at entry. For every case subject, five control subjects were selected. All case sub-

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Results: Screening invitation resulted in a breast cancer mortality reduction of 17% (95% confidence interval [CI]: -36%, +6%), similar to trial results. Different exposure definitions and self-selection adjustments influenced the observed breast cancer mortality reduction. Depending on the method, "ever screened" appeared to be associated with a small reduction (OR: 0.86, 95% CI: 0.40, 1.89) or no reduction (OR: 1.02, 95% CI: 0.48, 2.14) using the two methods of correction. Recent attendance resulted in an adjusted mortality reduction of 36% (95% CI: -69%, +31%) or 45% (95% CI: -71%, +5%).

Conclusions: Observational studies, and particularly case–control studies, are an important monitoring tool for breast cancer screening programs. The focus should be on diminishing bias in observational studies and gaining a better understanding of the influence of study design on estimates of mortality reduction.

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Published OnlineFirst December 8, 2015; DOI: 10.1158/1055-9965.EPI-15-0803

Research Article

Cancer Epidemiology, Biomarkers & Prevention

Impact of Screening on Breast Cancer Mortality: The UK Program 20 Years On

Nathalie J. Massat, Amanda Dibden, Dharmishta Parmar, Jack Cuzick, Peter D. Sasieni, and Stephen W. Duffy

Background With changes in diagnosis, treatment and management of breast cancer since the mammography screening trials, there is a need to evaluate contemporary breast screening programmes. A case-control study was set up to assess the current impact of attendance in the English Breast Screening Programme on breast cancer mortality.

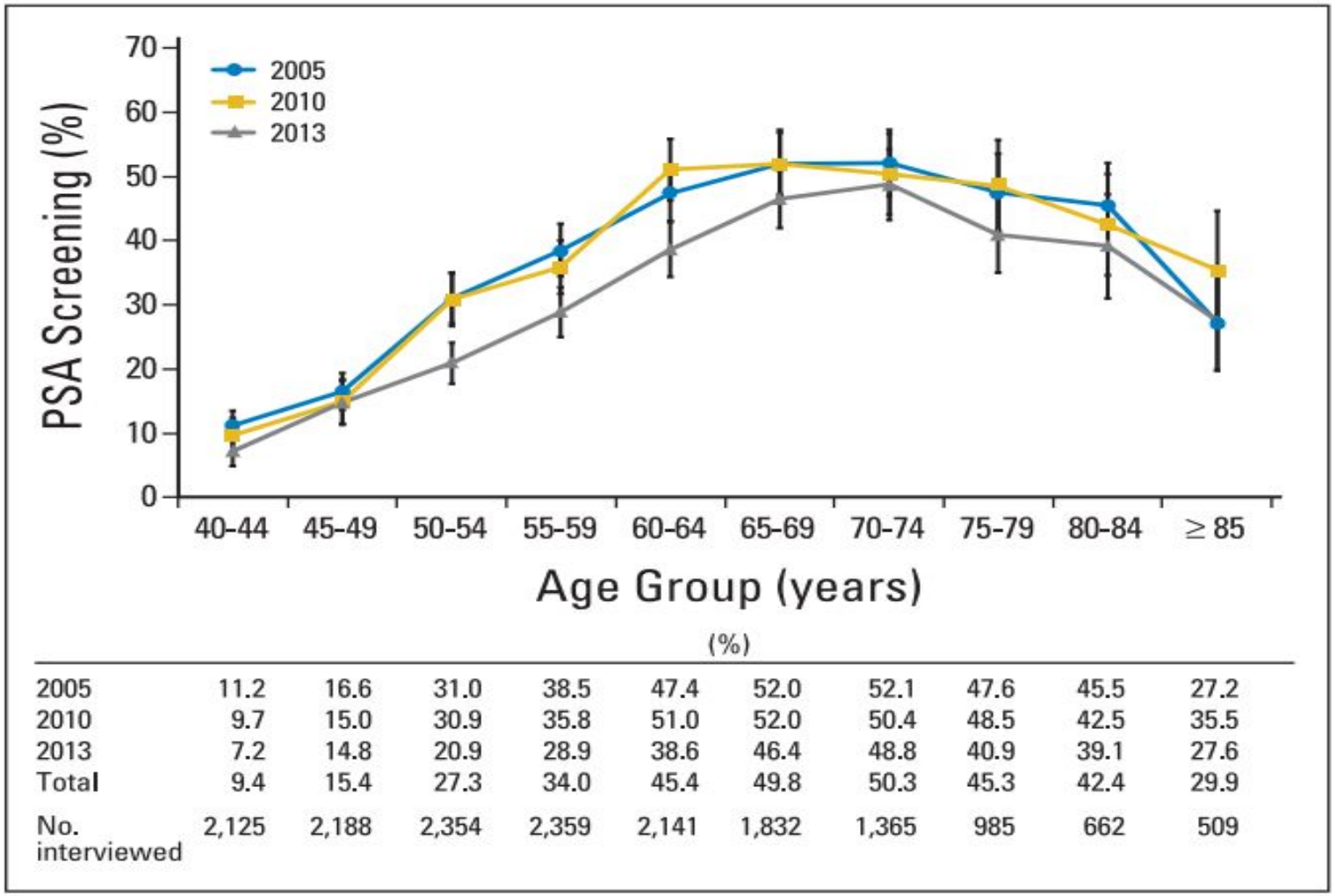
Methods Cancer registry cases who died from primary breast cancer aged 47-89 in London in 2008-2009 (869 women) were matched to 1 or 2 general population controls (1,642 women) with no diagnosis of breast cancer at the time of the case's diagnosis, who were alive at the case's death.

Results Attendance at breast screening resulted in a breast cancer mortality reduction of 36% (OR=0.64, 95%CI 0.45-0.88) after self-selection correction. Attendance in the last 3 years prior to diagnosis resulted in a 61% mortality reduction (OR=0.39, 95%CI 0.30-0.50). Lead time bias effects were negligible.

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2005	11.2	16.6	31.0	38.5	47.4	52.0	52.1	47.6	45.5	27.2
2010	9.7	15.0	30.9	35.8	51.0	52.0	50.4	48.5	42.5	35.5
2013	7.2	14.8	20.9	28.9	38.6	46.4	48.8	40.9	39.1	27.6
Total	9.4	15.4	27.3	34.0	45.4	49.8	50.3	45.3	42.4	29.9
No. interviewed	2,125	2,188	2,354	2,359	2,141	1,832	1,365	985	662	509

Fig 1. Proportion of men, by 5-year age group, who saw a physician in the year prior and received a prostate-specific antigen (PSA) test for screening purposes.

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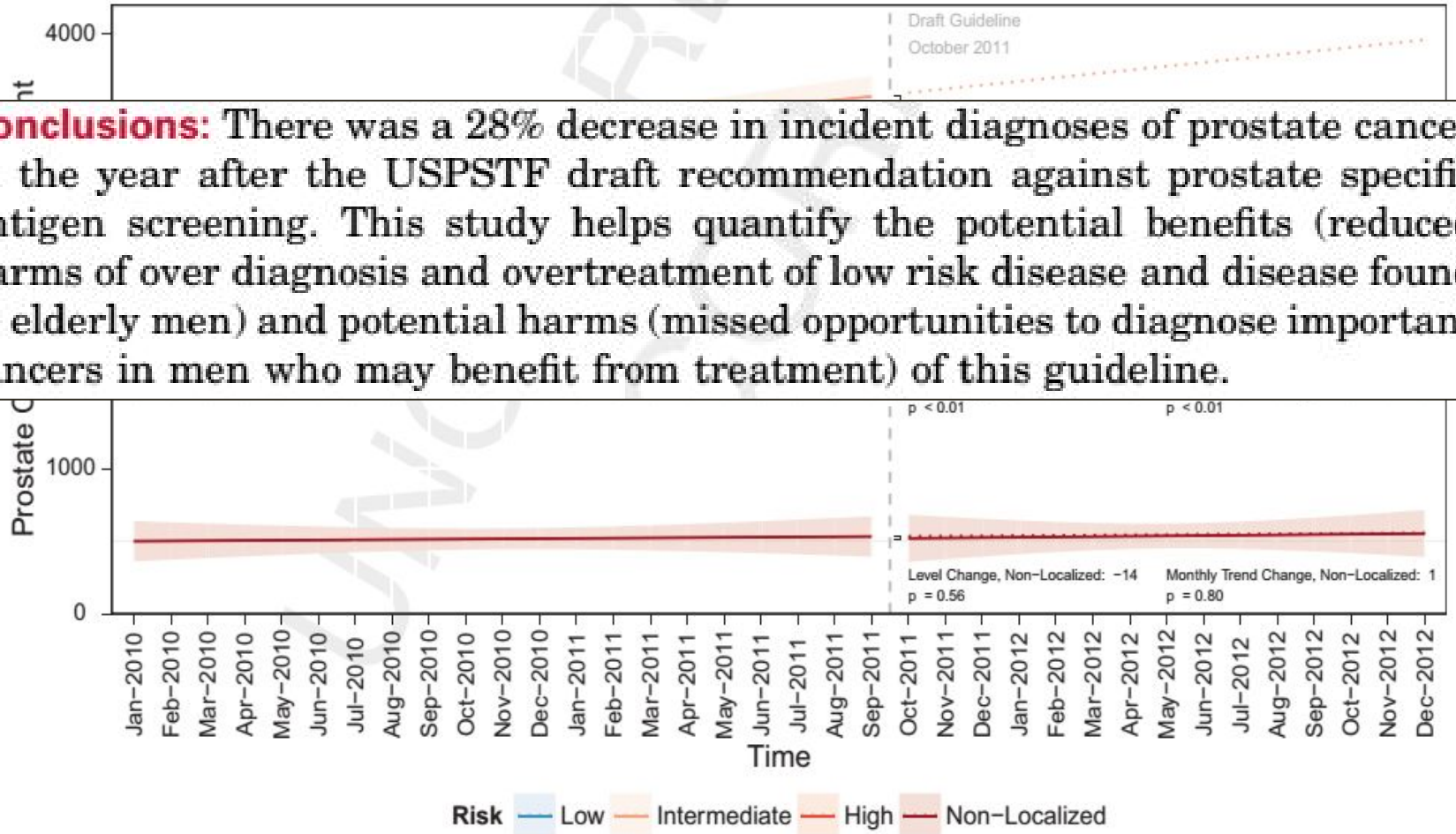
The Effect of the USPSTF Grade D Recommendation against Screening for Prostate Cancer on Incident Prostate Cancer Diagnoses in the United States

Daniel A. Barocas,*,† Katherine Mallin, Amy J. Graves, David F. Penson, Bryan Palis, David P. Winchester and Sam S. Chang‡

From the Department of Urologic Surgery (SSC) and Center for Surgical Quality and Outcomes Research, Vanderbilt University Medical Center (DAB, AJG, DFP), Nashville, Tennessee, and National Cancer Data Base, American College of Surgeons (KM, BP, DPW), Chicago, Illinois

J Urology 2015

Conclusions: There was a 28% decrease in incident diagnoses of prostate cancer in the year after the USPSTF draft recommendation against prostate specific antigen screening. This study helps quantify the potential benefits (reduced harms of over diagnosis and overtreatment of low risk disease and disease found in elderly men) and potential harms (missed opportunities to diagnose important cancers in men who may benefit from treatment) of this guideline.



Final Research Plan

Final Research Plan for Prostate Cancer: Screening

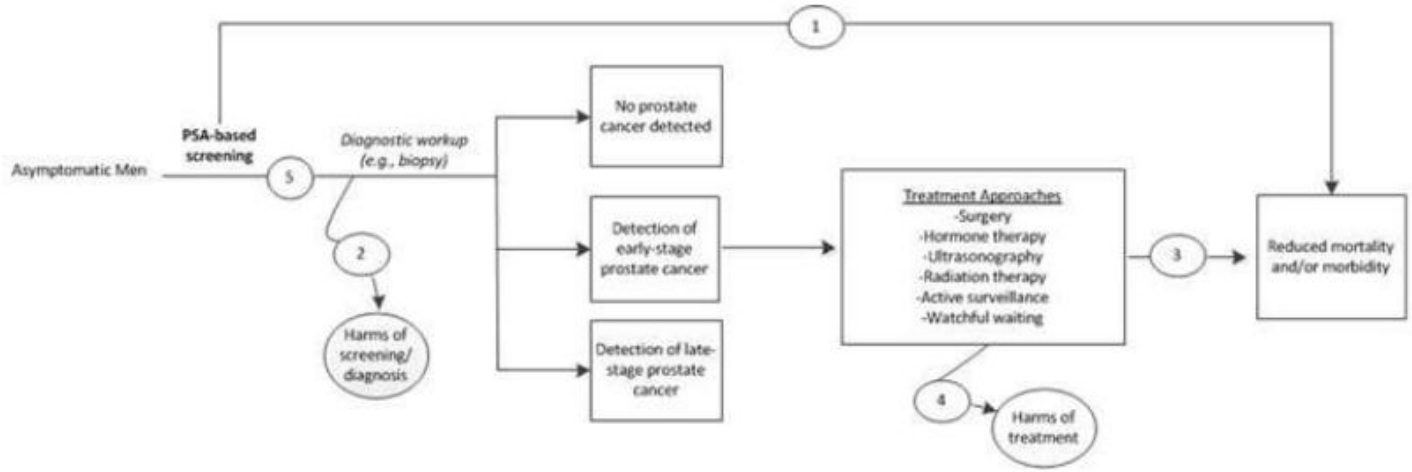
Recommendations made by the USPSTF are independent of the U.S. government. They should not be construed as an official position of the Agency for Healthcare Research and Quality or the U.S. Department of Health and Human Services.

Preface

The final Research Plan is used to guide a systematic review of the evidence by researchers at an Evidence-based Practice Center. The resulting Evidence Review will form the basis of the USPSTF Recommendation Statement on this topic.

This draft Research Plan was available for comment from October 29 until November 25, 2015 at 8:00 p.m., ET.

Analytic Framework



Abbreviation: PSA = prostate cancer-specific antigen.

Text Description.

Key Questions to Be Systematically Reviewed

1. Is there direct evidence that prostate cancer-specific antigen (PSA)-based screening for prostate cancer reduces short- or long-term prostate cancer morbidity* and mortality and all-cause mortality?
    a. Does the effectiveness of PSA-based screening vary by subpopulation/risk factor (e.g., age, race/ethnicity, family history, and clinical risk assessment)?
2. What are the harms of PSA-based screening for prostate cancer and diagnostic followup?
    a. Do the harms of PSA-based screening for prostate cancer and diagnostic followup vary by subpopulation/risk factor (e.g., age, race/ethnicity, family history, and clinical risk assessment)?
3. Is there evidence that various treatment approaches for early-stage or screen-detected prostate cancer reduce morbidity* and mortality?
    a. Does the effectiveness of these treatment approaches vary by subpopulation/risk factor (e.g., age, race/ethnicity, baseline PSA level, family history, comorbid conditions, and clinical risk assessment)?
4. What are the harms of the various treatment approaches for early-stage or screen-detected prostate cancer?
    a. Do the harms of these treatment approaches vary by risk factor (e.g., age, race/ethnicity, baseline PSA level, family history, comorbid conditions, and clinical risk assessment)?
    b. Do the harms differ by treatment approach?
5. Is there evidence that use of a prebiopsy prostate cancer risk calculator, in combination with PSA-based screening, accurately identifies men with clinically significant prostate cancer (i.e., cancer that is more likely to cause symptoms or lead to advanced disease) compared to PSA-based screening alone?

* Morbidity includes diagnosis of stage IV prostate cancer with attendant symptoms related to pain, bony metastases, complications due to late-stage disease, and health-related quality of life.

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Reduced and Full-Preparation CT Colonography, Fecal Immunochemical Test, and Colonoscopy for Population Screening of Colorectal Cancer: A Randomized Trial

JNCI J Natl Cancer Inst (2016) 108(2): djv319

Lapo Sali, Mario Mascalchi, Massimo Falchini, Leonardo Ventura, Francesca Carozzi, Guido Castiglione, Silvia Delsanto, Beatrice Mallardi, Paola Mantellini, Stefano Milani, Marco Zappa, Grazia Grazzini; for the SAVE study investigators

Methods: Citizens of a district of Florence, Italy, age 54 to 65 years, were allocated (8:2.5:2.5:1) with simple randomization to be invited by mail to one of four screening interventions: 1) biennial FIT for three rounds, 2) r-CTC, 3) f-CTC, 4) OC. Patients tested positive to FIT or CTC (at least one polyp ≥6 mm) were referred to OC work-up. The primary outcomes were participation rate and detection rate (DR) for cancer or advanced adenoma (advanced neoplasia). All statistical tests were two-sided.

Table 2. Socio-demographic characteristics of screening participants

	FIT		r-CTC		f-CTC		OC	
	Invitees* No.	Participants† No. (%)	Invitees* No.	Participants† No. (%)	Invitees* No.	Participants† No. (%)	Invitees* No.	Participants† No. (%)
Characteristics	(n = 9288)	(n = 4677)	(n = 2395)	(n = 674)	(n = 2430)	(n = 612)	(n = 1036)	(n = 153)
Age, y								
54–60	5652	2713 (48)	1473	394 (27)	1499	381 (25)	632	101 (16)
61–65	3636	1964 (54)	922	280 (30)	931	231 (25)	404	52 (13)
P		<.001‡§		.06‡		.77‡		.18‡

Table 4. Detection rate per participant

Participants	FIT DR Particip. No. (%) (n = 4677)	r-CTC DR Particip. No. (%) (n = 674)	f-CTC DR Particip. No. (%) (n = 612)	r-CTC and f-CTC* DR Particip. No. (%) (n = 1286)	OC DR Particip. No. (%) (n = 153)
Cancer	6 (0.1)	2 (0.1)	5 (0.8)	7 (0.5)	0 (0.0)
Advanced adenoma	73 (1.6)	35 (5.2)	25 (4.1)	60 (4.7)	11 (7.2)
Advanced neoplasia	79 (1.7)	37 (5.5)	30 (4.9)	67 (5.2)	11 (7.2)
Advanced adenoma ≥10 mm	54 (1.2)	20 (3.0)	14 (2.3)	34 (2.6)	3 (2.0)
Adenoma	18 (0.4)	12 (1.8)	9 (1.5)	21 (1.6)	7 (4.6)
Hyperplastic polyp	5 (0.1)	9 (1.3)	7 (1.1)	16 (1.2)	5 (3.3)

* Data of reduced cathartic preparation CT colonography and full cathartic preparation CT colonography pooled. DR = detection rate; f-CTC = full cathartic preparation CT colonography; FIT = fecal immunochemical test; OC = optical colonoscopy; r-CTC = reduced cathartic preparation CT colonography.

Table 5. Detection rate per invitee

Inviteest	FIT DR invitee No. (%) (n = 9288)	r-CTC DR invitee No. (%) (n = 2395)	f-CTC DR invitee No. (%) (n = 2430)	r-CTC and f-CTC* DR invitee No. (%) (n = 4825)	OC DR invitee No. (%) (n = 1036)
Cancer	6 (0.1)	2 (0.1)	5 (0.2)	7 (0.1)	0 (0.0)
Advanced adenoma	73 (0.8)	35 (1.5)	25 (1.0)	60 (1.2)	11 (1.1)
Advanced neoplasia	79 (0.9)	37 (1.5)	30 (1.2)	67 (1.4)	11 (1.1)
Advanced adenoma ≥ 10 mm	54 (0.6)	20 (0.8)	14 (0.6)	34 (0.7)	3 (0.3)
Adenoma	18 (0.2)	12 (0.5)	9 (0.4)	21 (0.4)	7 (0.7)
Hyperplastic polyp	5 (0.1)	9 (0.4)	7 (0.3)	16 (0.3)	5 (0.5)

Conclusions: Reduced preparation increases participation in CTC. Lower attendance and higher DR of CTC as compared with FIT are key factors for the optimization of its role in population screening of CRC.

EDITORIAL

Colorectal Cancer Screening by Colonoscopy, CT-Colonography, or Fecal Immunochemical Test

Ernst J. Kuipers, Manon C. W. Spaander

JNCI J Natl Cancer Inst (2016) 108(2): djv383

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is firstly important to note that complete colonoscopy was performed in 98% of screenees, with a positive CTC vs only 76% of screenees with a positive FIT. The authors do not explain the

Secondly, while the authors accepted a 10% referral rate to colonoscopy after CTC, they decided to use a relatively high FIT cut-off of 20 mcg/g feces, associated with a 5.5% referral rate to colonoscopy. We know

sia (12). When correcting for the lower referral rate and completion rate of colonoscopy after FIT than after CTC, the potential for detection of advanced neoplasia would increase by (1.3 x 1.3 =) 1.69-fold from 8.5 to 14.3 screenees with advanced neoplasia per 1000 invited. This is very similar to the rate obtained with CTC and is still lower than achieved in other FIT studies (6,7,13,14).

The true impact of FIT screening is achieved by repeated rounds. This is often associated with a sustained or further increase in participation rate yet a gradual decrease in diagnostic yield per screening round (15–17). Over three to four rounds, the diagnostic yield can thus accumulate to more than 40 subjects identified with advanced neoplasia per 1000 invited (15,17,18). As a result, FIT screening has become the standard for primary assessment in organized population CRC screening (1). This is further supported by the important study of Sali and colleagues.

Appropriateness of endoscopic surveillance recommendations in organised colorectal cancer screening programmes based on the faecal immunochemical test

Manuel Zorzi,[1] Carlo Senore,[2] Anna Turrin,[3] Paola Mantellini,[4] Carmen Beatriz Visioli,[4] Carlo Naldoni,[5] Priscilla Sassoli de' Bianchi,[5] Chiara Fedato,[3] Emanuela Anghinoni,[6] Marco Zappa,[4] Cesare Hassan,[7] the Italian colorectal cancer screening survey group

Gut 2015;**0**:1–7. doi:10.1136/gutjnl-2015-310139

Objectives To assess the appropriateness of recommendations for endoscopic surveillance in organised colorectal cancer (CRC) screening programmes based on the faecal immunochemical test (FIT).

Design 74 Italian CRC screening programmes provided aggregated data on the recommendations given after FIT-positive colonoscopies in 2011 and 2013. Index colonoscopies were divided into negative/no adenoma and low- risk, intermediate-risk and high-risk adenomas. Postcolonoscopy recommendations included a return to screening (FIT after 2 years or 5 years), an endoscopic surveillance after 6 months or after 1 year, 3 years or 5 years, surgery or other. We assessed the deviation from the postcolonoscopy recommendations of the European Guidelines in 2011 and 2013 and the correlation between overuse of endoscopic surveillance in 2011 and the process indicators associated with the endoscopic workload in 2013.

Table 3 Distribution of 2011 and 2013 recommendations, by type of diagnosis

Diagnosis	Recommendation (row %) 2011 Routine FIT screening	2011 Total colonoscopy 5 years	2011 Total colonoscopy 3 years	2011 Total colonoscopy 6 months/1 year	2013 Routine FIT screening	2013 Total colonoscopy 5 years	2013 Total colonoscopy 3 years	2013 Total colonoscopy 6 months/1 year	p Value*
Negative/non-adenomatous polyp	87.2	7.4	3.3	2.1	92.1	3.8	1.9	2.1	<0.001
Low						55.6	17.9	6.7	<0.001
Inte						8.4	70.4	18.3	<0.001
Hig						2.5	28.4	68.3	<0.001

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Table 4 Comparison of the number of observed recommendations for a TC and of expected recommendations according to the EuGL, by type of diagnosis

Diagnosis	Recommended TC	Expected TC according to EuGL	Difference
Negative/ non-adenom polyp			
Low-risk ade			
Intermediate adenoma			
High-risk ad			
Total	17 860	11 164	+6696

EuGL, European guidelines for quality assurance in colorectal cancer screening and diagnosis; TC, total colonoscopy.

Conclusions In organised screening programmes, a high rate of inappropriate recommendations for patients with low risk or no adenomas occurs, affecting the demand for endoscopic surveillance by a third.

Moltes gràcies!