

# BÖLÜM 2

## Kolorektal kanser için tarama

Çeviren: Mustafa Ateş

*İnönü Üniversitesi, Tıp Fakültesi, Genel Cerrahi AD, Malatya, Türkiye*

### ANAHTAR NOKTALAR

- Guaiac bazlı gaitada gizli kan testi kullanılarak yapılan kolorektal kanser taramasının, hastalığa özgü mortalite oranında sürekli bir azalma sağladığı popülasyon bazlı randomize çalışmalarla gösterilmiştir.
- Guaiac bazlı gaitada gizli kan testi, insan hemoglobini için spesifik değildir.
- Gaita immunokimyasal test (GIT), insan hemoglobini için spesifiktir ve ölçülebilir bir testtir.
- GIT, taramada standart bir metod olarak guaiac gaitada gizli kan testinin yerini alacak gaita tarama yöntemi gibi görülmektedir.
- Randomize çalışmaları göstermiştir ki, fleksible sigmoidoskopi ile adenomların çıkarılması hem hastalığın insidansında hem de hastalığa özgü mortalite oranlarında azalma sağlanmaktadır.
- Kolonoskopi yapılanlarda hem mortalite oranında hem de hastalık insidansında azalma sağlandığı ispatlanmıştır. Fakat, tarama testi olarak kolonoskopi kullanımı hakkında, popülasyon bazlı randomize çalışmalarla sağlanmış bir veri henüz mevcut değildir.
- Taramanın sonuçları cinsiyet, tarama testlerinin farkındalığı ve etnik kökenden etkilenir.
- Taramada yeni yaklaşımlar sırası ile gaitada DNA marklarının tespiti, proteinler ve DNA metilasyonunu gösteren kan testleri yeni geliştirilen tarama testleridir. Bununla beraber hali hazırda bu testler popülasyon taramaları için önerilmemektedir.

### OLGU ÇALIŞMASI

65 yaşında erkek hasta popülasyon tarama programına çağrıldı. İlk olarak tarama merkezinden 2 hafta sonra, kendisine gaitada gizli kan testi gönderileceğini açıklayan bir mektup gönderildi. Bu ön bildiri mektubunun bir sayfasında tarama işleminin artıları ve eksileri açıklanmıştı. İki hafta sonra, hastaya guaiac bazlı gaitada gizli

## Kaynaklar

1. Cancer Research Campaign. *Cancer Stats: Cancer Worldwide*, September 2011
2. Cancer Research Campaign. *Cancer Stats: Large bowel cancer - UK*, June 2006.
3. Jellema P van der Windl DAWM, Bruinvels DA, et al. Value of symptoms and additional diagnostic tests for colorectal cancer in primary care; systematic review and metaanalysis. *&WJ*2010; 340: cl269. doi: 10.1136/bmj.cl269.
4. Ahmed S, Leslie A, Thaha M, Carey FA, Steele RJC. Lower gastrointestinal symptoms do not discriminate for colorectal neoplasia in a faecal occult blood screen-positive population. *Br J Surg* 2005; 92: 478-81.
5. Winawer SJ, Zauber AG, Fletcher AG, et al. Guidelines for colonoscopy surveillance after polypectomy: a consensus update by the US Multi-Society Task Force on colorectal cancer and the American Cancer Society. *Gastrenterology* 2006; 130: 1872-85.
6. Wilson JM, Jungner F. Principles and practice of screening for disease. *Public Health Papers No. 34*. Geneva WHO 1968.
7. IGN (Scottish Intercollegiate Guidelines Network). Diagnosis and management of colorectal cancer. Edinburgh: SIGN; 2011 (SIGN publication no.126) [December 2011]. Available from: <http://www.sign.ac.uk>
8. Leslie A, Carey FA, Pratt NR, Steele RJC. The colorectal adenoma-carcinoma sequence. *Br J Surg* 2002; 89: 845-60.
9. Young GP Macrae FA, St John DJB. Clinical methods for early detection: basis, use and evaluation. In: Young GP Rozen P Levin B (eds), *Prevention and Early Detection of Colorectal Cancer* WB Saunders, London 1996.
10. Pignone M, Campbell MK, Carr C, Phillips C. Meta-analysis of dietary restriction during faecal occult blood testing. *Eff Clin Pract* 2001; 4: 1 50-6.
11. Mandel JS, Bond JH, Church JR, Snover DC, Bradley GM, Schuman LM, et al. Reducing mortality from colorectal cancer by screening for faecal occult blood. *N Engl J Med* 1993; 328: 1365-71.
12. Mandel JS, Church TR, Bond JH, Ederer F, Geisser MS, Mongin SJ, et al. The effect of fecal occult-blood screening on the incidence of colorectal cancer. *N Engl J Med* 2000; 343: 1603-7
13. 1 3 Hardcastle JD, Chamberlain JO, Robinson MHE, Moss SM, Amar SS, Balfour TW et al. Randomized controlled trial of faecal occult blood screening for colorectal cancer. *Lancet* 1996, 348: 1472-7
14. Scholefield JH, Moss S, Mangham CM, Whynes DK, Hardcastle JD. Nottingham trial of faecal occult blood testing for colorectal cancer: a 20-year follow-up. *Gut* 2012; 61 1036-40. doi: 10.1136/gutjnl-2011-300774.
15. Robinson MHE, Thomas WM, Hardcastle JD, Chamberlain J, Mangham CM. Change towards earlier stage at presentation of colorectal cancer. *Br J Surg* 1993; 80: 1610-12.
16. Scholefield JH, Robinson MH, Mangham CM, Hardcastle JD. Screening for colorectal cancer reduces emergency admissions. *Eur J Surg Oncol* 1998; 24: 47-50.
17. Kronborg O, Fenger C, Olsen J, Jorgensen OD, Sondergaard O. Randomised study of screening for colorectal cancer with faecal occult blood test. *Lancet* 1996; 348: 1467-71.

18. Jorgensen OD, Krongborg O, Fenger C. A randomised study of screening for colorectal cancer using faecal occult blood testing: results after 13 years and seven biennial screening rounds. *Gut* 2002; 50: 29-32.
19. Faivre J, Dancourt V Lejeune C, Tazi MA, Lamour J, Gerard D, et al. Reduction in colorectal cancer mortality by fecal occult blood screening in a French controlled study. *Gastroenterology* 2004; 126: 1674-80.
20. Lindholm E, Brevinge H, Haglind E. Survival benefit in a randomised clinical trial of faecal occult blood screening for colorectal cancer. *Br J of Surg* 2008; 95: f 029-36.
21. Hewitson P Glasziou P Watson E, Towler B, frwig L. Cochrane systematic review of colorectal cancer screening using the faecal occult blood test (hemoccult): an update. *Am .1 Gastroenterol* 2008; 103: 1541-9.
22. Steele RJC, Parker R, Patrick J et al. A demonstration pilot for colorectal cancer screening in the United Kingdom: a new concept in the introduction of health care strategies. *J Med Screen* 2001, 8: 197-202.
23. UK Colorectal Cancer Screening Pilot Group. Results of the first round of a demonstration pilot of screening for colorectal cancer in the United Kingdom. *BMJ* 2004; 329: 133-5.
24. Steele RJC, McClements PL, Libby G, Black R, Morton C, Birrell J, et al. Results from the first three rounds of the Scottish demonstration pilot of FOBT screening for colorectal cancer. *Gut* 2009; 58: 530-5.
25. Logan RFA, Patnick J, Nickerson C, et al. Outcomes of the Bowel Cancer Screening Programme (BCSP) in England after the first 1 million tests. *Gut* 2012; 61: 1439-46. doi: 10.1136/gutjnl-2011-300843.
26. Fraser CG, Matthew CM, Mowat NAG, Wilson JA, Carey FA, Steele RJC. Immunochemical testing of individuals positive for guaiac faecal occult blood test in a screening programme for colorectal cancer: an observational study. *Lancet Oncol* 2006; 7" 127-31.
27. Fraser CG, Digby J, McDonald PJ, Strachan J A, Carey FA, Steele RJC. Experience with a two-tier reflex gFOBT/FIT strategy in a national bowel screening programme. *J Med Screen* 2012; 19: 8-13.
28. Guittet L, Bouvier V Mariotte N, et al. Comparison of a guaiac based and an immunochemical faecal occult blood test in screening for colorectal cancer in a general average risk population. *Gut* 2007- 56: 210-14.
29. Van Rossum LG, van Rijn AF, Laheij RJ, et al. Random comparison of guaiac and immunochemical fecal occult blood tests for colorectal cancer in a screening population. *Gastroenterology* 2008; 135: 82-90.
30. Hoi L, Wilschut JA, van Ballegooijen M, van Vuuren AJ, van der Valk H, Reijerink JOY, et al. Screening for colorectal cancer: random comparison of guaiac and immunochemical faecal occult blood testing at different cut-off levels. *Br J Cancer* 2009; 100: 1103-10.
31. Levi Z, Rozen P Hazazi R, Vilkin A, Waked A, Maoz E, et al. A quantitative immunochemical fecal occult blood test for colorectal neoplasia. *Ann Internal Med* 2007' 146: 244-55.
32. Brenner H, Haug U, Hundt S. Sex differences in performance of fecal occult blood testing. *Am J Gastroenterol* 2010; 105: 2457-64.

33. Omata F, Shintani A, Isozaki M, Masuda K, Fujita Y, Fukui T. Diagnostic performance of quantitative fecal immunochemical test and multivariate prediction model for colorectal neoplasms in asymptomatic individuals. *Eur J Gastroenterology & Hepatology* 2011; 123: 1036-41.
34. Zorzi M, Fedato C, Grazzini G, et al. High sensitivity of five colorectal screening programmes with faecal immunochemical test in the Veneto Region, Italy. *Gut* 2011; 60: 944-9.
35. Chen L-S, Yen AM-F, Chiu S Y-H, Liao C-S, Chen H-H. Baseline faecal occult blood concentration as a predictor of incident colorectal neoplasia: longitudinal follow-up of a Taiwanese population-based colorectal cancer screening cohort. *Lancet Oncol* 2011; 12: 551-8. doi: 10.1016/j.laneonc.2011.07.002.
36. Van Roon AHC, Goede SL, van Ballegooijen M, van Vuuren AJ, Loosman CWN, et al. Random comparison of repeated faecal immunochemical testing at different intervals for population-based colorectal cancer screening. *Gut* 2013; 62:409-15. doi: 10.1136/gutjnl-2011-301583.
37. Atkin WS, Edwards R, Wardle J, Northover JM, Sutton S, Hart AR, et al. Design of a multicentre randomised trial to evaluate flexible sigmoidoscopy in colorectal cancer screening. *J Med Screen* 2001; 8: 137-44.
38. Segnan N, Armaroli P, Bonelli L, Risio M, Sciallero S, Zappa M, et al. and the SCORE Working Group. *JNCI* 2011; 103: 1310-22.
39. Atkin WS, Edwards R, Kralj-Hans I, et al. Once-only flexible sigmoidoscopy screening in prevention of colorectal cancer: a multicentre randomised controlled trial. *Lancet* 2010; 375: 1624-33.
40. Hoff G, Grotmol T, Skovlund E, Brethauer M, for the Norwegian Colorectal Cancer Prevention Group. Risk of colorectal cancer seven years after flexible sigmoidoscopy screening: randomised controlled trial. *BMJ* 2009; 338: b1846.
41. Hoi L, van Leerdaam ME, van Ballegooijen M, et al. Screening for colorectal cancer: a randomised trial comparing guaiac-based and immunochemical faecal occult blood testing and flexible sigmoidoscopy. *Gut* 2010; 59: 62-8.
42. Hoi L, de Jonge V, van Leerdaam ME, et al. Screening for colorectal cancer: comparison of perceived test burden of guaiac-based faecal occult blood test, faecal immunochemical test and flexible sigmoidoscopy. *Eur J Cancer* 2010; 46: 2059-66.
43. Segnan N, Senore C, Andreoni B, et al. Comparing attendance and detection rate of colonoscopy with sigmoidoscopy and FIT for colorectal cancer screening. *Gastroenterology* 2007; 132: 230.
44. Robb K, Power E, Kralj-Hans I, Edwards R, Vance M, Atkin W, et al. Flexible sigmoidoscopy screening for colorectal cancer: uptake in a population-based pilot programme. *J Med Screen* 2010; 17: 75-8.
45. Gray M. Screening sigmoidoscopy: a randomised trial of invitation style. *Health Bulletin* 2000; 58: 137-40.
46. McCaffery Wardle J, Nadel M, Atkin W. Socioeconomic variation in participation in colorectal cancer screening. *J Med Screen* 2002; 9: 104-8.
47. Steele RJC, Kostourou I, McClements P, Wadding C, Libby G, Weller D, et al. Effect of gender, age and deprivation on key performance indicators in a FOBT based colorectal screening programme. *J Med Screen* 2010; 17: 68-74.

48. Hoi L, Kuipers EJ, van Ballengooijen M, van Vuuren AJ, Reijerink JOY, Habbema DJF, et al. Uptake of faecal immunochemical test screening among nonparticipants in a flexible sigmoidoscopy screening programme. *Intl J Cancer* 2012; 130: 2096-102.
49. Senore C, Ederle A, Benazzato L, Arrigoni A, Silvani M, Fantin A, et al. Offering people a choice for colorectal cancer screening. *Gut* 2013; 62: 735-40. doi: 10.1136/gutjnl-2011 301013.
50. Rex DK, Cutler CS, Lemmel GT et al. Colonoscopic miss rates of adenomas determined by back-to-back colonoscopies. *Gastroenterology* 1997- 112: 24-8.
51. Pickhardt PJ, Choi JR, Hwang I, Butler JA, Puckett ML, Hildebrand HA, et al. Computed tomographic virtual colonoscopy to screen for colorectal neoplasia in asymptomatic adults. *N Engl J Med* 2003; 349: 219 ] -200.
52. Zauber AG, Winawer SJ, O'Brien MJ, Lansdorp-Vogelaar I, van Ballegooijen M, Hankey BF, et al. Colonoscopic polypectomy and long-term prevention of colorectal-cancer deaths. *N Eng J Med* 2012; 366: 687-96.
53. Regula J, Rupinski M, Kraszewska E, Polkowski M, Pachlewski J, Orlowska J, et al. Colonoscopy in colorectal-cancer screening for detection of advanced neoplasia. *N Eng J Med* 2006; 355: 1863-72.
54. Kaminski M F, Regula J, Kraszewska E, Polkowski M, Wojciechowska U, M, Rupinski M, et al. Quality indicators for colonoscopy and the risk of interval cancer. *N Engl J Med* 2012; 362: 1795-803.
55. Muller AD, Sonnenberg A. Protection by endoscopy against death from colorectal cancer. A case-control study among veterans. *Arch Intern Med* 1995; 155: 1741-8.
56. Segnan N, Senore C, Andreoni B, Azzoni A, Bisanti L, Cardelli A, et al. and the SCORE3 Working Group Italy. *Gastroenterology* 2007- I 32: 2304-12.
57. Baxter NN, Goldwasser MA, Paszat LF, Saskin R, Urbach DR, Rabeneck L. Association of colonoscopy and death from colorectal cancer. *Ann Intern Med* 2009; 1 50: 1-8.
58. Brenner H, Hollmeister M, Arndt V Stegmaier C, Altenholen L, Haug U. Protection from right- and left-sided colorectal neoplasms after colonoscopy: population-based study. *INCI* 2010; 102: 89-95.
59. Singh H, Nugent Z, Demers AA, Kliewer EV Mahmud SM, Bernstein CN. The reduction in colorectal cancer mortality after colonoscopy varies by site of the cancer. *Gastroenterology* 2012; 139: 1128-37
60. Stoop EM. de Haan MC. de Wijkerslooth TR, Bossuyt PM, van Ballegooijen M, Nio CY, et al. Participation and yield of colonoscopy versus non-cathartic CT colonography in population-based screening for colorectal cancer: a randomised controlled trial. *Lancet Oncol* 2012; 13: 5 5-64.
61. Von Wagner C, Baio G, Raine R, Snowball J, Morris S, Atkin W et al. Inequalities in participation in an organised national colorectal cancer screening programme: results from the first 2.6 million invitations in England. *Intl J Epidemiol* 2012; 40: 712-8. doi: 1093/ije/dyr008.
62. Von Euler-Chelpin M, Brasso K, Lynge E. Determinants of participation in colorectal cancer screening with faecal occult blood testing. *J Public Health* 2009; 32: 395-405.

63. Steele RJC, Kostourou I, McClements P, Watling C, Libby G, Weller D, et al. Effect of repeated invitations on uptake of colorectal cancer screening using faecal occult blood testing: analysis of prevalence and incidence screening. *BMJ* 2010; 341 c5531. doi:10.1136/bmj.c5531.
64. Young GP, St John DJB, Cole SR, Bielecki BE, Pizzey C, Sinatra MA, et al. Prescreening evaluation of a brush-based faecal immunochemical test for haemoglobin. *J Med Screen* 2003; 10: 123-8.
65. Tinmouth J, Ritvo P, McGregor SE, Claus D, Pasut G, Myers RE, et al. A qualitative evaluation of strategies to increase colorectal cancer uptake. *Can Fam Physician* 2011, 57:e7-15.
66. Zajac IT, Whibley AH, Cole SR, Byrne D, Guy J, Morcom J, et al. Endorsement by the primary care practitioner consistently improves participation in screening for colorectal cancer: a longitudinal analysis. *J Med Screen* 2010; 17: 19-24.
67. Hewitson P, Ward AM, Heneghan C, Halloran SP, Mant D. Primary care endorsement letter and a patient leaflet to improve participation in colorectal cancer screening: results of a factorial randomised trial. *Br J Cancer* 2011, 105: 475-80.
68. Cole SR, Smith A, Wilson C, Turnbull D, Estonian A, Young GP. An advance notification letter increases participation in colorectal cancer screening. *J Med Screen* 2007- 14: 73-5.
69. Libby G, Bray J, Champion J, Brownlee LA, Birrell J, Gorman DR, et al. Pre-notification increases uptake of colorectal cancer screening in all demographic groups: a randomized controlled trial. *J Med Screen* 2011. 18: 24-9.
70. Dupont-Lucas C, et al. Socio-geographical determinants of colonoscopy uptake after faecal occult blood test. *Dig Liver Dis* 2011, 43: 714-20. doi: 10.1016/j.dld.2011.03.003.
71. Rodger J, Steele RJC. Telephone assessment increases uptake of colonoscopy in a FOBT colorectal cancer-screening programme. *J Med Screen* 2008; 15: 105-7.
72. Steele RJC, McClements P, Watling C, Libby G, Weller D, Brewster DH, et al. Interval cancers in a FOBT-based colorectal cancer population screening programme: implications for stage, gender and tumour site. *Gut* 2012; 61: 576-81.
73. MacDonald PJ, Strachan JA, Digby J, Steele RJC, Fraser CG. Faecal haemoglobin concentrations by gender and age: implications for population-based screening for colorectal cancer. *Clin Chem Lab Med* 2011, 50: 935-40. doi: 10.1515/CCLM.2011.815.
74. Steele RJC, Brewster D. Should we judge cancer screening programmes by their effect on total mortality rather than cancer specific mortality? *BMJ* 2011, 343: 938-9 (d6397).
75. Black WC, Jlaggstrom DA, Welch HG. All-cause mortality in randomised trials of cancer screening. *JNCI* 2002; 94: 167-73.
76. Thomas WM, Hardcastle JD. Role of upper gastrointestinal investigations in a screening study for colorectal neoplasia. *Gut* 1990; 31: 1294-7.
77. Hisamuddin K, Mowat NAG, Phull PS. Endoscopic findings in the upper gastrointestinal tract of faecal occult blood-positive, colonoscopy-negative patients. *Dig Liver Dis* 2006; 38: 503-7.

78. ScHARR. Colorectal cancer screening options appraisal. *Report to the English Bowel Cancer Screening Working Group*, September 2004.
79. Berchi C, Guittet L, Bouvier V Launoy G. Cost-effectiveness analysis of the optimal threshold of an automated immunochemical test for colorectal cancer screening. *Intl J Tech Assess Health Care* 2010; 26: 48-53.
80. Lansdorp-Vogelaar I, van Ballegooijen M, Zauber AG, Habbema JDF, Kuipers EJ. Effect of rising chemotherapy costs on the cost savings of colorectal cancer screening. *JNCI* 2009; 101: 1412-22.
81. Duffy MJ, van Rossum LGM, van Turenhout ST, Malminniemi O, Sturgeon C, Lamerz R, et al. Use of faecal markers in screening for colorectal neoplasia: a European group on tumor markers position paper. *Intl J Cancer* 2011; 130: 3-11.
82. Hundt S, Haug U, Brenner H. Blood markers for early detection of colorectal cancer: a systematic review. *Biomarkers Prev* 2007; 16: 1935-53.
83. Griitzmann R, Molnar B, Pilarsky C, Habermann JK, Schlag PM, Saeger HD, et al. Sensitive detection of colorectal cancer in peripheral blood by Septin 9 DNA methylation assay. *Plos One* 2008; 3: e3759.
84. Sonoda H, Kohnoe S, Yamazato T, et al. Colorectal cancer screening with odour material by canine scent detection. *Gut* 2011; 60: 814-9. doi: 10.1136/gut2010.218305.
85. Benson VS, Atkin WS, Green J, Nadel MR, Patnick J, Smith RA, et al. on behalf of the International Colorectal Cancer Screening Network. Toward standardizing and reporting colorectal cancer screening indicators on an international level: the International Colorectal Cancer Screening Network. *Int. J. Cancer* 2012; 130: 2961-73.

#### **ÇOKTAN SEÇMELİ SORULARIN CEVAPLARI**

1. B
2. A
3. B