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What's next for ovarian cancer screening? Learning from UKCTOCS

ASGO WEBINAR #44

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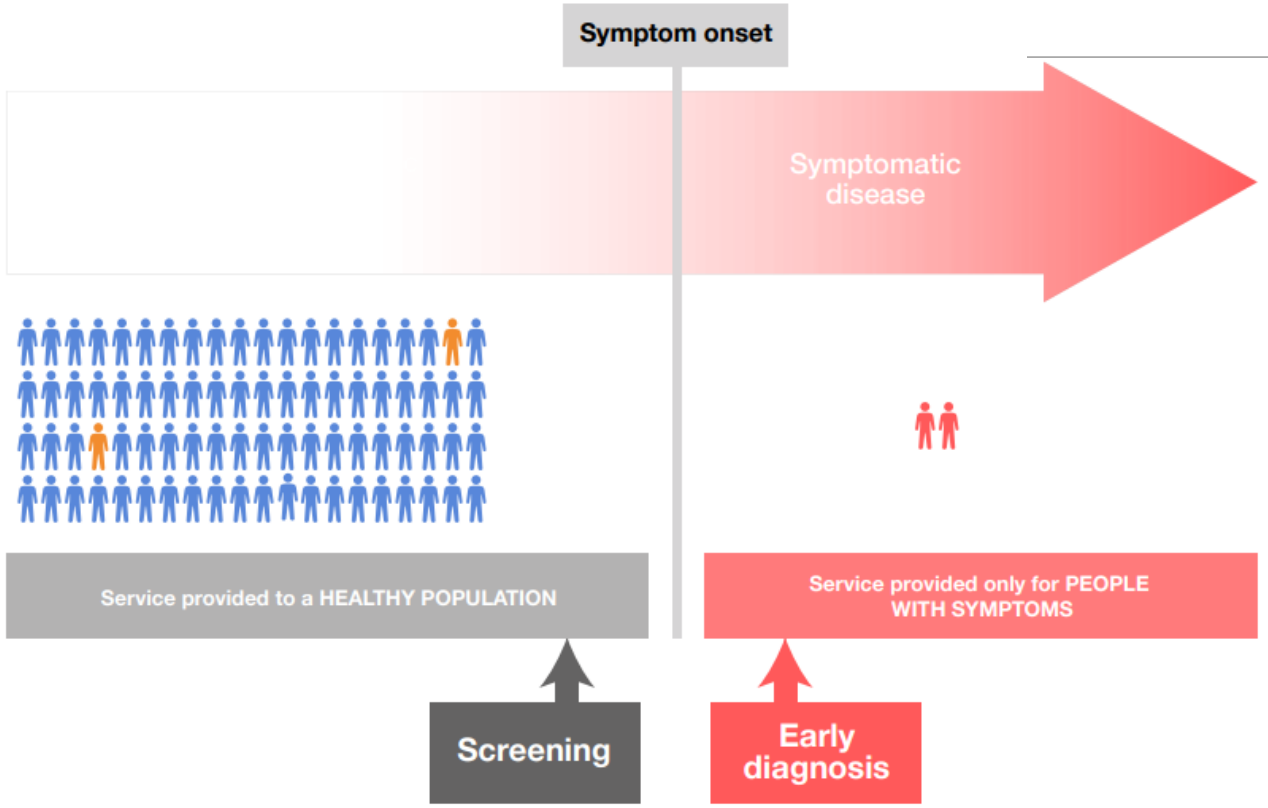
ASGO Asian Society of Gynecologic Oncology

Cancer screening

World Health Organization
REGIONAL OFFICE FOR Europe

Fig. 2. Comparison of cancer screening and early diagnosis strategies



Source: adapted from WHO Regional Office for Europe *(1)*.

A short guide to cancer screening

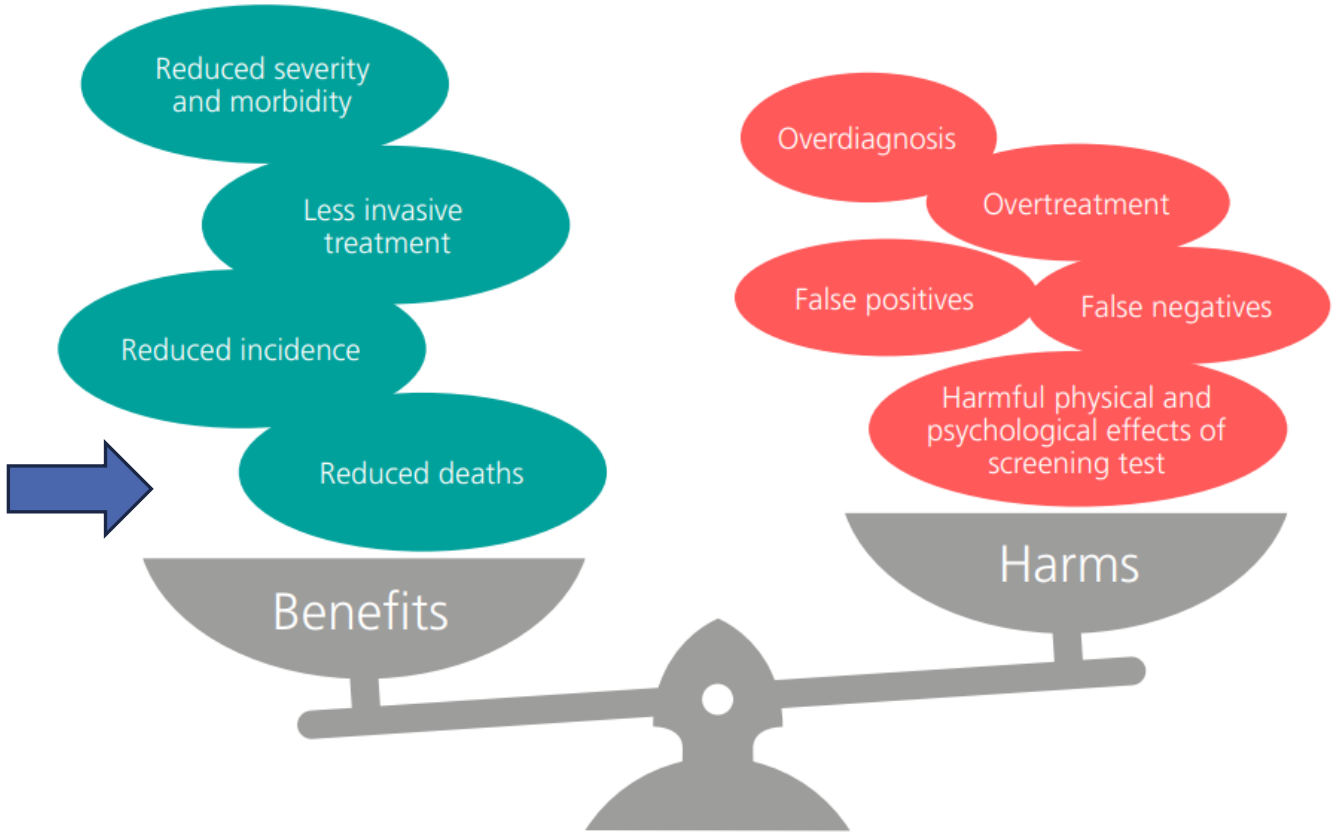
Increase effectiveness, maximize benefits and minimize harm

Screening invites people in a target population who are **asymptomatic** to undergo testing

Early diagnosis is the recognition of symptomatic cancer at an early stage

Cancer screening in Ca ovary

Fig. 5. Making sure the benefits of cancer screening outweigh the harms



Cancer screening

Who to screen:

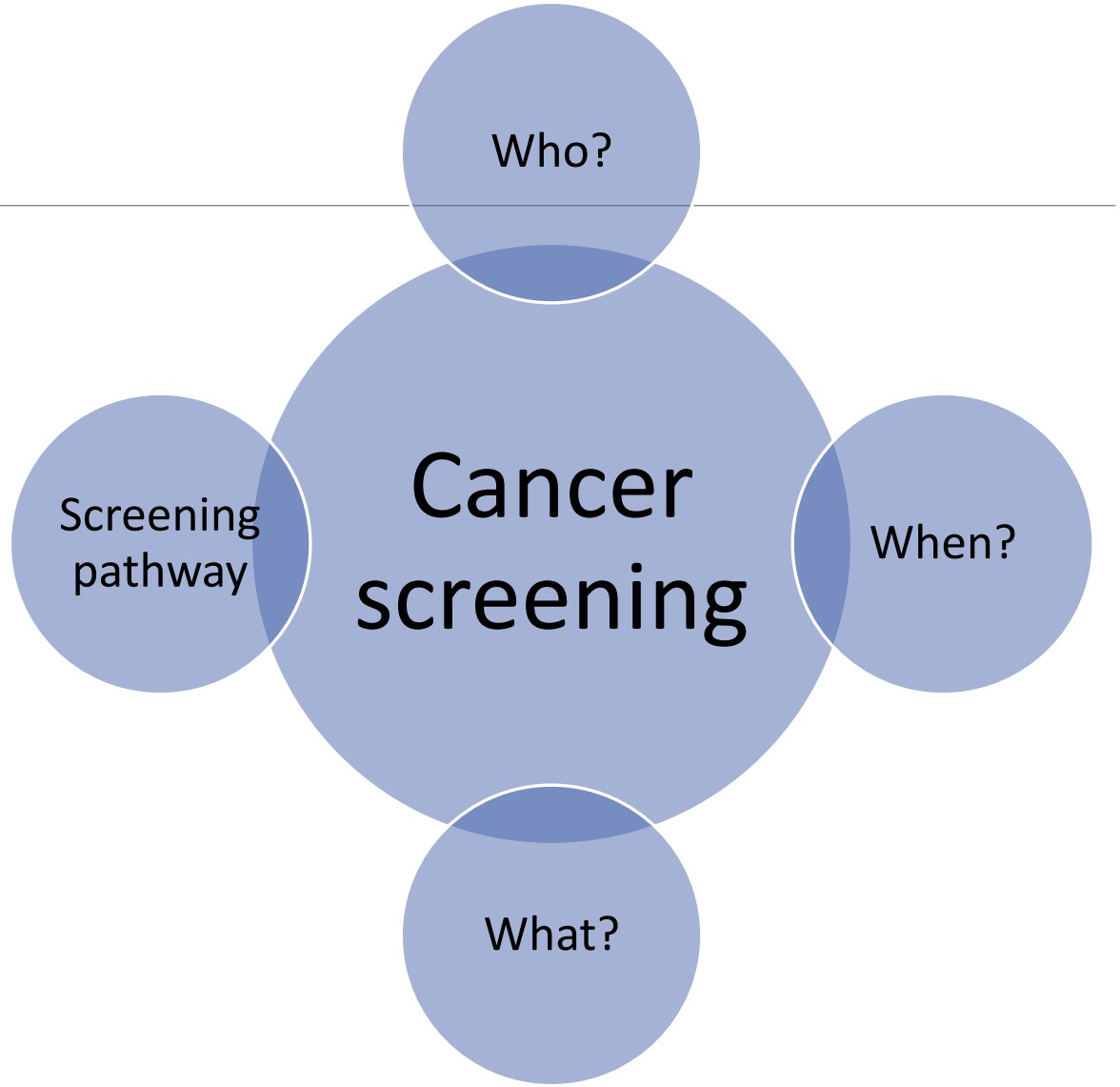
- **Asymptomatic** vs high risk

What is the best screening tool?

- TVS? CA 125 (Single vs longitudinal?)

When to start the screening?

What to do when screen positive?



RCTs on ovarian cancer screening

Table 1. Characteristics of All Included Trials

Age

Source	Quality[a]	Study Dates	No. Randomized	No. Analyzed	White, %	Family History of Breast or Ovarian Cancer, %	Enrollment and Recruitment Source	Inclusion and Exclusion Criteria	Key Outcomes Reported[b]
UKCTOCS,[31] 2016 United Kingdom	Good	2001-2004	202 638	202 546	96	1.6 (ovarian) 6.4 (breast)	National Health Service catchments of 13 regional centers in Wales, England, and Northern Ireland; women recruited from 27 primary care service groups in the regions	Inclusion: Postmenopausal, aged 50-74 y Exclusion: Self-reported history of bilateral oophorectomy or ovarian malignancy, increased risk of familial ovarian cancer, active nonovarian malignancy	KQ1: Ovarian cancer (ovarian, fallopian tube, and peritoneal cancer) incidence and mortality KQ2: Screening false-positive rates, surgery, and surgical complications
PLCO,[21] 2011 United States	Good	1993-2010[c]	78 216	68 557[d]	88	17.4	Community volunteers from the catchment areas of 10 screening centers	Inclusion: Aged 55-74 y Exclusion: Previous bilateral oophorectomy; history of lung, colorectal, or ovarian cancer; current treatment for cancer other than nonmelanoma skin cancer; colonoscopy, sigmoidoscopy, or barium enema in past 3 y; previous surgical removal of lung or entire colon; participation in other screening trial[e]	KQ1: Ovarian cancer (ovarian, fallopian tube, and peritoneal cancer) incidence and mortality KQ2: Screening false-positive rates, surgery, and surgical complications
QUEST,[29] 2007 United States	Fair	NR	592	549	95	17.1	Population volunteers, physician referral	Inclusion: aged ≥30 y Exclusion: High risk of ovarian cancer[f]; cancer diagnosis in past year; plans to become pregnant in the following 2 y	KQ2: Psychological harms of screening program participation
UK Pilot,[33] 1999 United Kingdom	Good	1989-1998	21 955	21 935	95	NR	Community volunteers and postal invitations to 40 primary care practices in England, Scotland, and Wales	Inclusion: Postmenopausal, ≥45 y old Exclusion: History of bilateral oophorectomy, ovarian cancer, or any active malignancy	KQ1: Ovarian cancer (ovarian, fallopian tube cancer) incidence and mortality KQ2: Screening false-positive rates and surgical complications

Table 2. Screening Protocols for Trials Addressing Ovarian Cancer Mortality (Key Question 1)[a]

Source	Screening Intervention	Abnormal Test Result Definitions	Follow-up Protocol for Screen-Positive Women	Comparison Group	Screening Frequency	Maximum No. of Screening Rounds	Follow-up, Median (Range), y	Ovarian Cancer Cases During Follow-up, %[b]
UKCTOCS,[31] 2016	Group 1: CA-125 testing with ROCA algorithm used to determine risk-based protocol for follow-up[c]	Intermediate risk (risk ≥1/1818); elevated risk (risk ≥1/500)[d]	Clinical assessment and surgical investigation conducted by trial clinicians according to a specified protocol depending on screening result	No screening	Annual	11[e]	11.1 (0-13.6)	1323 (0.65) (group 1 and group 2)
	Group 2: TVU	One or both ovaries with complex morphology, simple cysts >60 cm^3, or ascites	Clinical assessment and surgical investigation conducted by trial clinicians	No screening	Annual	11	11.1 (0-13.6)	
PLCO,[21] 2011	TVU and CA-125[f]	CA-125: ≥35 U/mL TVU: Ovarian volume >10 cm^3; cyst volume >10 cm^3; any solid area or papillary projection extending into the cavity of a cystic ovarian tumor of any size; or any mixed (solid and cystic) component within a cystic ovarian tumor	Notification of patients and their primary care physicians; follow-up through community care	Standard community care	Annual	CA-125: 6 TVU: 4	12.4 (NR)	388 (0.57)
UK Pilot,[33] 1999	CA-125 testing; follow-up included ultrasound for elevated CA-125 levels[g]	CA-125 ≥30 U/mL	Referral through family physician to a gynecologist for surgical investigation	No screening	Annual	3[h]	NR (0-8)	36 (0.16)

JAMA | US Preventive Services Task Force | EVIDENCE REPORT
Screening for Ovarian Cancer
Updated Evidence Report and Systematic Review
for the US Preventive Services Task Force

Recommendations

In randomized trials conducted among **average-risk, asymptomatic women**, ovarian cancer mortality did not significantly differ between screened women and those with no screening or in usual care

Question 1

Results from the study:

- Most cancers grouped as high-grade serous cancer (type II) were reported as high-grade serous (771 [74·9%] of 1029)

Any information on BRCA status in this cohort?

With the advancement of use of targeted therapy in CA ovary, whether we can extrapolate about the survival benefit with the use of targeted therapy in the light of BRCA status in this cohort.

Question 2

Results from the study:

- In the multimodal screening group compared with the no screening group:
- fewer were diagnosed with advanced stage disease (195 [75%] of 259 vs 446 [86%] of 520; p=0·0003)
- more had primary surgery (158 [61%] vs 219 [42%]; p<0·0001)

Any information on the recurrence status of those found to have ovarian cancer?

Whether there is any difference in the RFS between MMS vs no screening group during the follow-up period?

Thank you

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