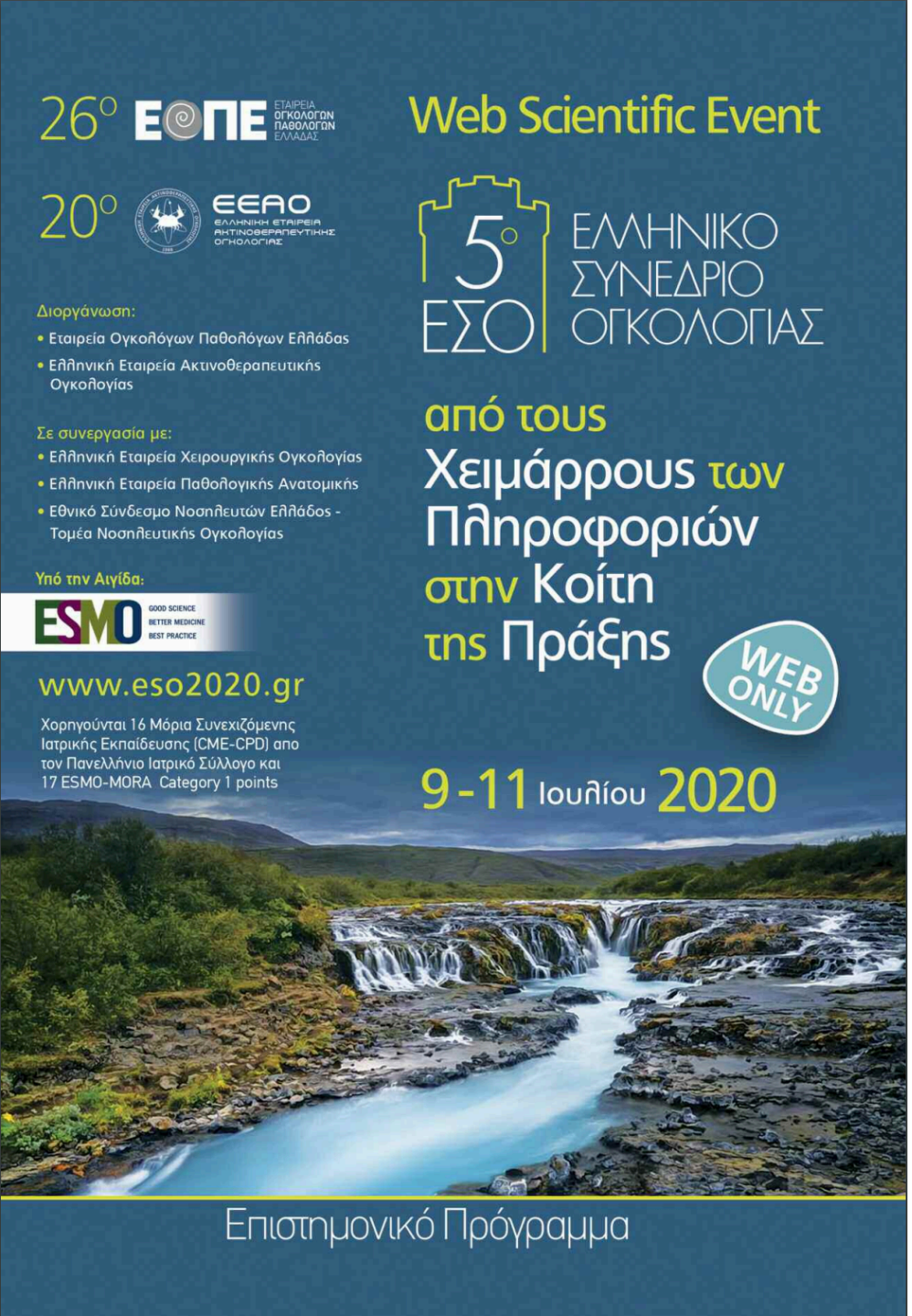

το μοριακό διαγνωστικό χάος:

μπορεί να επηρεάσει την ακτινοθεραπεία;

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δήλωση συμφερόντων

- I do not have any conflicts of interest to declare

outline

- general facts
- principles of combining RT & systemic therapy
- RT & molecular targeted drugs
- do data exist?
- biomarkers in radiotherapy
- conclusions

general facts

general facts

- modern radiotherapy:

  highly conformal (intensity modulated radiation therapy)

  image guided radiation therapy

  functional imaging

  ➡ new techniques:

  VMAT

  SBRT

  SRS

general facts

- radiotherapy alone or in combination with systemic therapy
- important component of cancer treatment
- standard of care:
  - head neck
  - lung
  - gastrointestinal tract
  - urinary & genital organs
  - central nervous system
- over of 50% of cancer pts

general facts

- substantial advances in precision cancer medicine

  molecular targeting agents

  - driver mutations
  - aberrant intracellular signaling
  - tumor microenvironmet

general facts

Currently Recommended Predictive Molecular Testing for Prostate Cancers

BIOMARKER	TEST DETECTS	WHEN	TECHNOLOGY	RECOMMENDATIONS	EVIDENCE	CANCER TYPE
BRCA1 and *BRCA2*	Mutation (somatic and germline)	Initial workup: If the patient has a strong family history on initial diagnosis[a] If the patient has metastatic, castration-resistant disease	NGS	A known germline mutation could help guide therapy (eg, PARP and other DDR enzyme inhibitors)	Lower level; wide acceptance	Prostate cancers
ATM	Germline mutation	Initial workup showing strong family history If patient has metastatic castration-resistant disease	NGS	NCCN guidelines recommend inquiring about known *BRCA1/BRCA2* mutations in a patient's family for prostate cancer early detection[61] and Na et al[63] proposed that, if a patient's family member died of prostate cancer before age 75 y, a genetic test of *BRCA1BRCA*/2 and *ATM* is recommended Known *BRCA1/BRCA2* and *ATM* germline mutations could help guide therapy with PARP and other DNA damage–response enzyme inhibitors	Lower level[b]	Prostate cancers

general facts

?

role of radiation therapy

in this molecular chaos

general facts

main aspects

- individualized radiation doses on the basis of gene-expression profiles that reflect tumor & normal tissue radiosensitivity
- targeted agents impact cellular damage and repair pathways

  thereby altering the response patterns of radiotherapy

- nearly all our experience in non-curative, metastatic populations