

9^{ος} χρόνος

πανελλήνιο συνέδριο καθ' οδόν προς το βέλτιστο στην ογκολογία

Αθήνα
15-17 Απριλίου 2022
Ξενοδοχείο **grand hyatt**

θα χορηγηθούν μόρια συνεχιζόμενης
ιατρικής εκπαίδευσης (CME-CPD)

Θα είναι η "flash therapy" η θεραπεία του μέλλοντος;

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general facts

- approx. 60% of Ca pts are managed with RT sometime during the course of disease
- ionizing radiation causes lethal or sublethal damage to cells resulting in cell death
- acute & chronic toxicity to normal tissues
- novel strategies that maintain the antitumoral effect of RT whilst limiting the extent of toxicities
 - IMRT (VMAT/IGRT)
 - protons

FLASH therapy history

- 1959 Dewey and Boag “flash effect”
 - ultra high dose irradiation protects bacteria compared to conventional dose rate irradiation
- 1967 Town
 - ultra high dose rate irradiation on one pulse, higher survival of mammalian cells compared to two pulses
- 1969 Berry et al
 - better survival in mammalian cells with ultra high dose irradiation

FLASH therapy history

- 2014 Favaudon et al: name “**FLASH RT**”

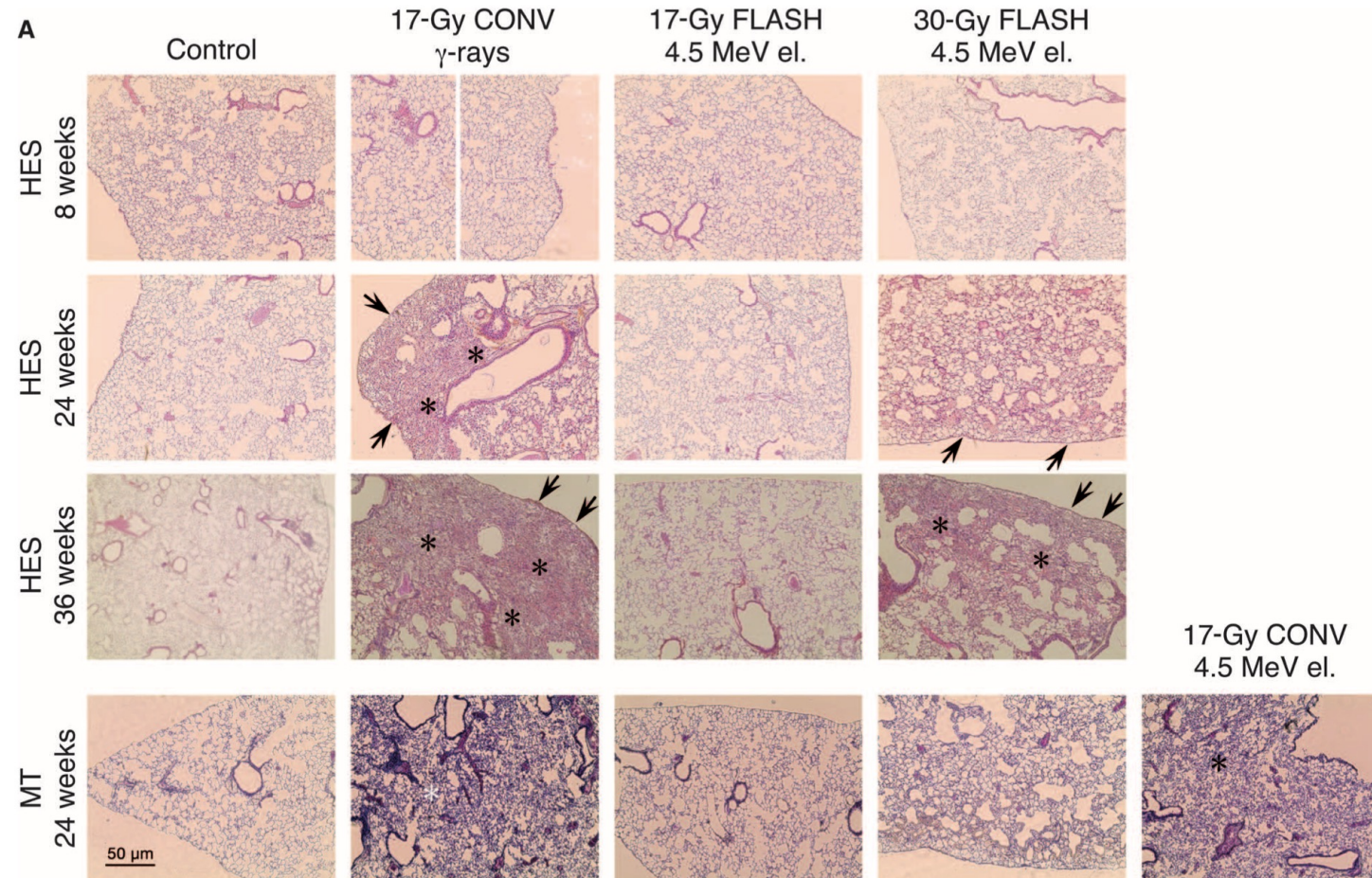
FLASH therapy history

- 2014 Favaudon et al
“FLASH” name

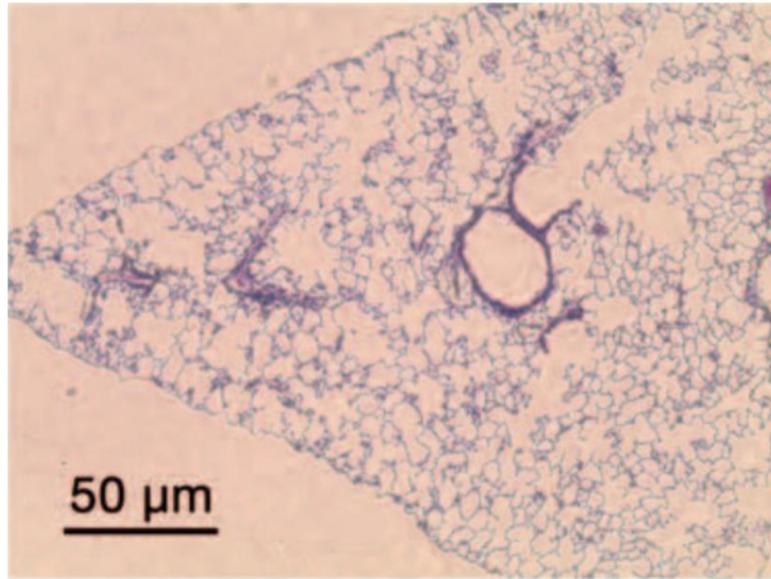
thoracic irradiation of mice; histopathologic pulmonary fibrosis at 36w

- conventional single fr 17 Gy (0.03 Gy/sec):
moderate & severe pulmonary fibrosis
- 17 or 30 Gy ultra high dose rates (40-60 Gy/sec):
significant reduced fibrotic effect

FLASH therapy

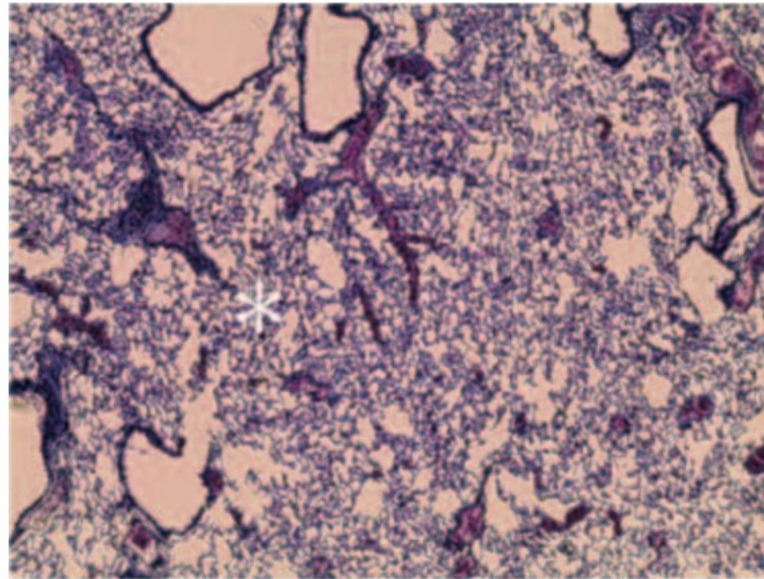


FLASH therapy



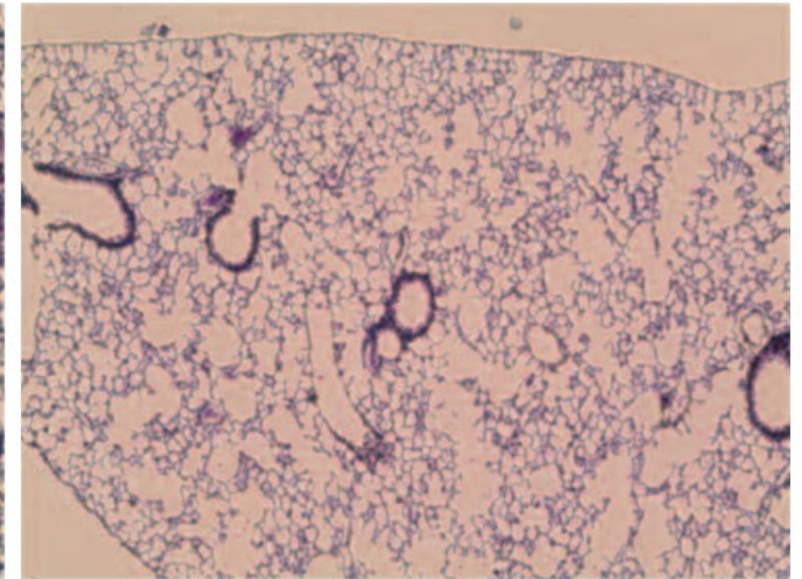
**NORMAL
TISSUE**

Control
0 Gy/s



**SIGNIFICANT
FIBROSIS**

Standard RT 17 Gy
0.03 Gy/s



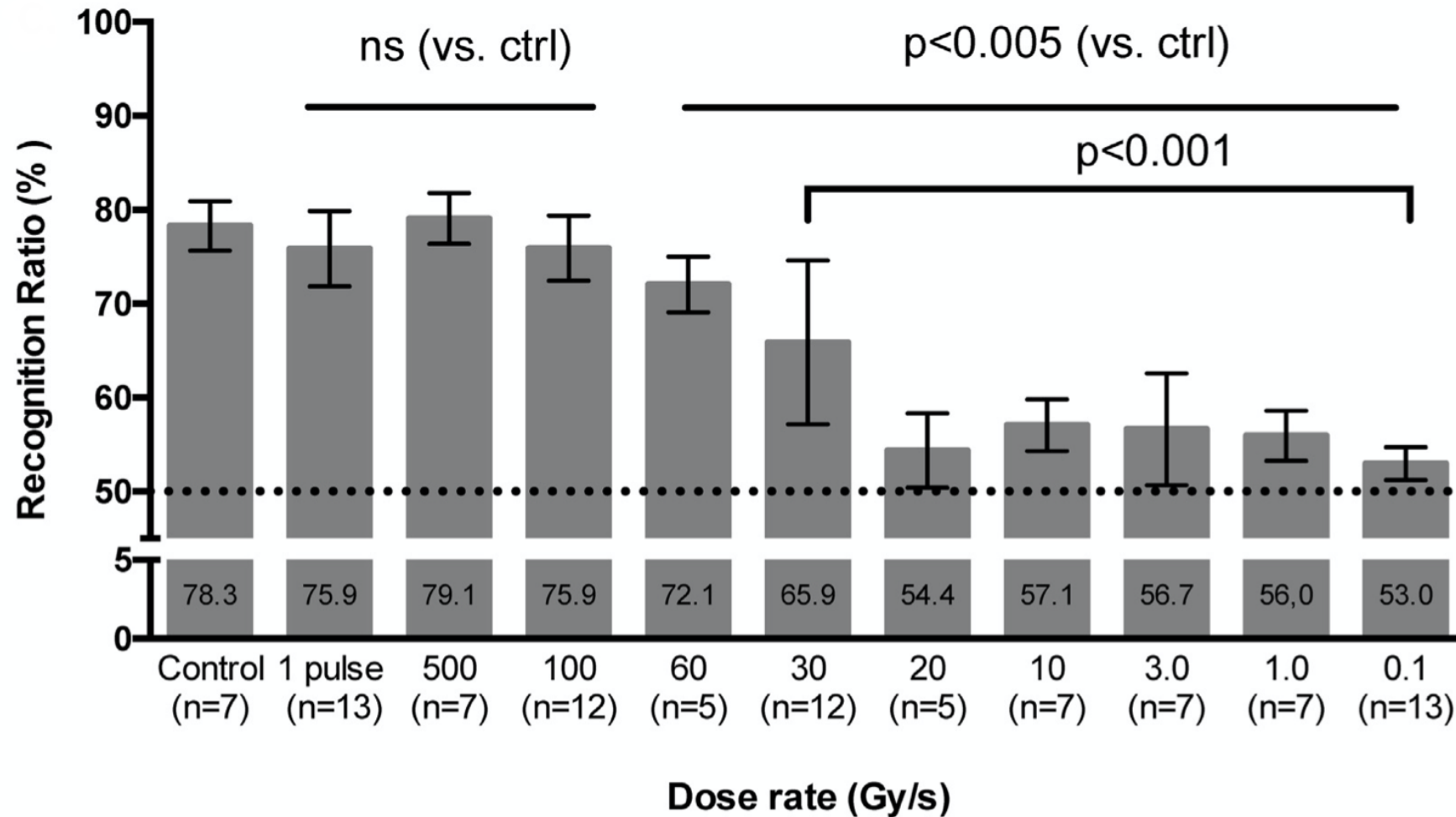
**NO APPARENT
DAMAGE**

FLASH 17 Gy
60 Gy/s

less normal tissue toxicity

FLASH studies

brain protection



FLASH studies

brain protection

- as dose rate increased ≥ 30 Gy/s mice performed significantly better
- dose rate ≥ 100 Gy/s no statistical difference in novel object recognition with control group