

Перспективы терапевтического лечения злокачественных опухолей костей

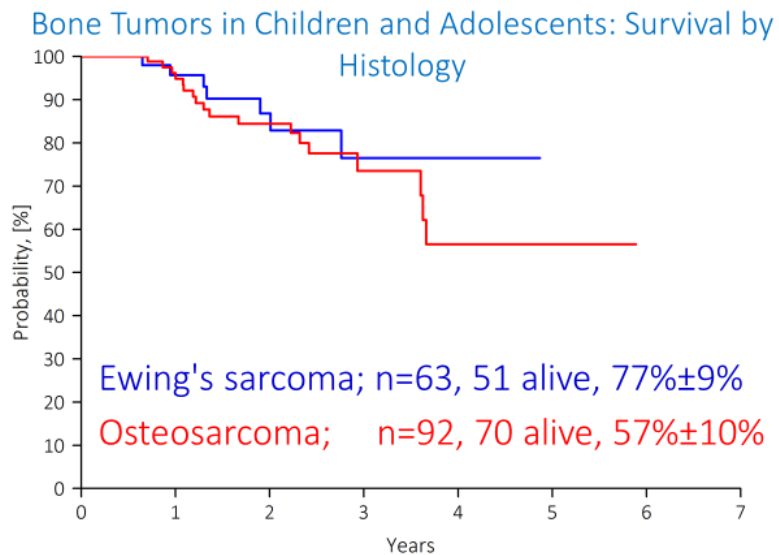
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НМИЦ ДГОИ им. Д. Рогачева

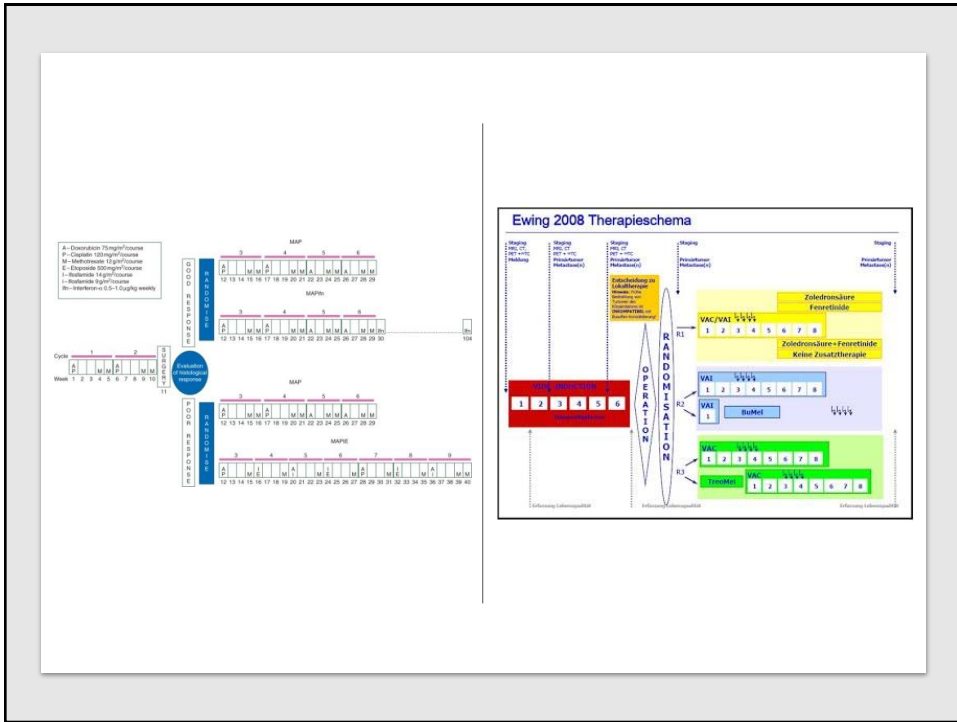
РЕГИОНЫ, активно
участвующие в работе научно-
клинической группы по
опухолям костей



Patient Distribution by Stage and Histology

Stage	Osteosarcoma	Ewing's sarcoma
Total	92 (100%)	63(100%)
1	0 (0%)	0 (0%)
2	47 (51.1%)	31 (49.2%)
3	1 (1.1%)	1 (1.6%)
4A	35 (38.0%)	17 (27.0%)
4B	9 (9.8%)	14 (22,2%)





Протонная терапия

The diagram shows the components of a proton therapy system: Протонные лучи (Proton beams), Бомбос (Bomb), Коллиматор (Collimator), and Протонный пучок (Proton beam). It also labels internal organs: Сердце (Heart), Лёгкое (Lung), and Спинальный мозг (Spinal cord). A comparison of two chest CT scans shows that proton therapy (left) has a more precise target area compared to conventional radiotherapy (right). A third image shows a patient's body with a radiation dose distribution, indicating 0% radiation to the intestines and liver.

Новые виды лучевой терапии

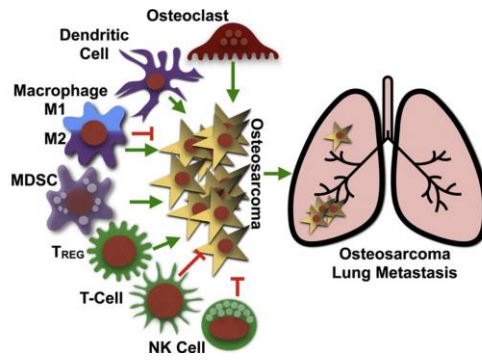
Лекарственная терапия

The diagram illustrates three immunological states: **Elimination phase** (immune cells attacking tumor cells), **Equilibrium** (immune cells and tumor cells in a state of balance), and **Escape** (tumor cells evading immune response). Key cells shown include T cells (CD8⁺, T_H1, T_H2, T_H17, γδ), NK cells, Macrophages (M1, M2), Dendritic cells, B cells, and Tumor cells. MDSCs (Myeloid-Derived Suppressor Cells) are also shown in the escape phase.

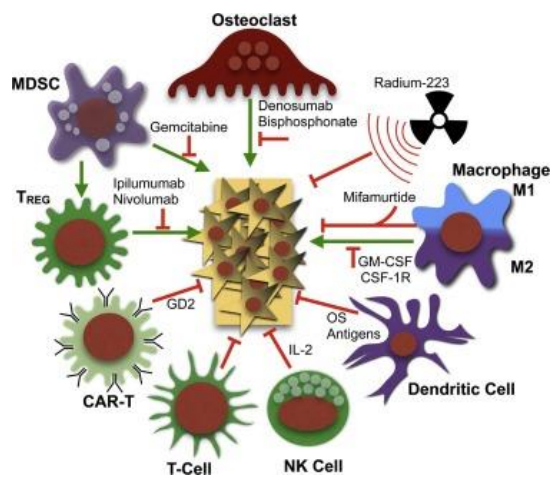
Targets in preclinical development	Targets in clinical development	Potential targets	Targets in clinical development	Potential targets
<ul style="list-style-type: none"> IL-12 IL-18 	<ul style="list-style-type: none"> IL-2 GM-CSF INFα and INFβ Immune adjuvants: mifamurtide and Coley's toxin 	<ul style="list-style-type: none"> INFγ IL-1 IL-6 IL-8 TNFα Perforin Granzyme B TRAIL 	<ul style="list-style-type: none"> PDL1 and PD1 CTLA4 TIM3 LAG3 CD137 	<ul style="list-style-type: none"> MHC class II FASLG IL-10 IL-23 TGFβ INFγ Scavenger receptor A Arginase CD40

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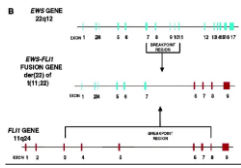
Остеосаркома



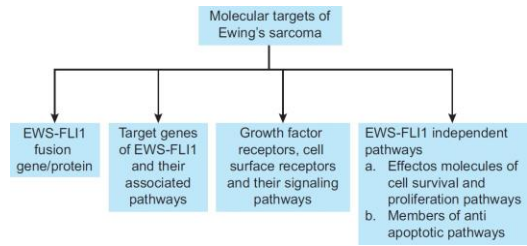
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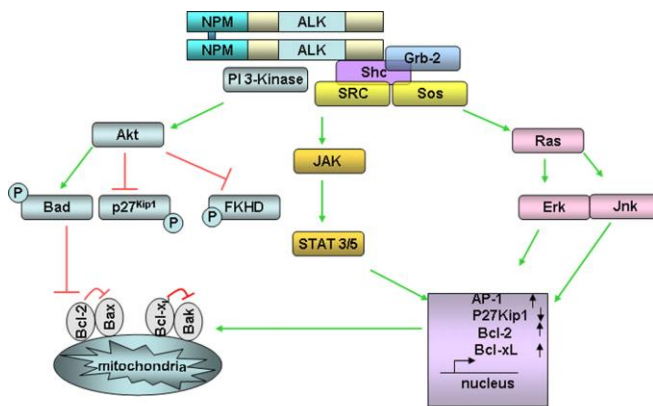
EWING SARCOMA RESEARCH



Саркома Юинга



Анти-ALK



Survival, proliferation, transformation, apoptosis inhibition

Checkpoint ингибиторы

