

Pt # 45 -- RLW



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Baseline



S/P 8 cycles



The New York Times

NEW YORK, SUNDAY, SEPTEMBER 19, 2010

When Testing a Drug Means Withholding It

By AMY HARMON

Growing up in California's rural Central Valley, the two cousins spent summers racing dirt bikes and Christmases at their grandmother's on the coast. Endowed with a similar brash charm, they bought each other matching hardhats and sought iron-working jobs together. They shared a love for the rush that comes with hanging steel at dizzying heights, and a knack for collecting speeding tickets

TARGET: CANCER

Trial or Error?

sure to respond to it. And major cancer centers, including the University of California, Los Angeles, were enrolling patients for the last, crucial test that regulators required to consider approving it for sale.

"Dude, you have to get on these superpills," Thomas McLaughlin, then 24, whose melanoma was diagnosed first, urged his

Even if it became clear that the chemotherapy could not hold back the tumors advancing into his lungs, liver and, most painfully, his spine, he would not be allowed to switch, lest it muddy the trial's results.

"I'm very sorry," Dr. Bartosz Chmielowski, the U.C.L.A. oncologist treating both cousins, told Mr. Ryan's mother, Jan. He sounded so miserable that afternoon that Mrs. Ryan, distraught, remembers pausing to feel sorry for the doctor.

Thomas and Brandon

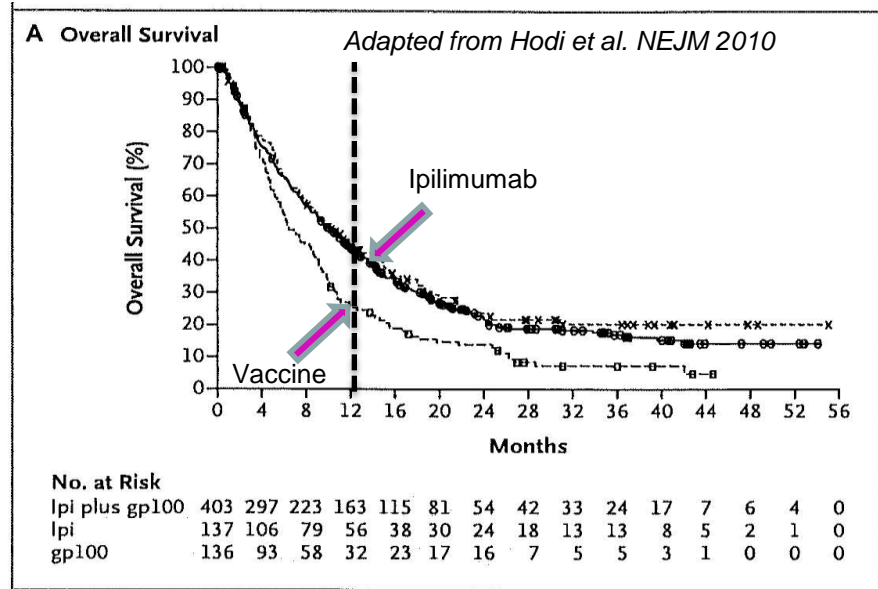


Advances in Melanoma Immunotherapy

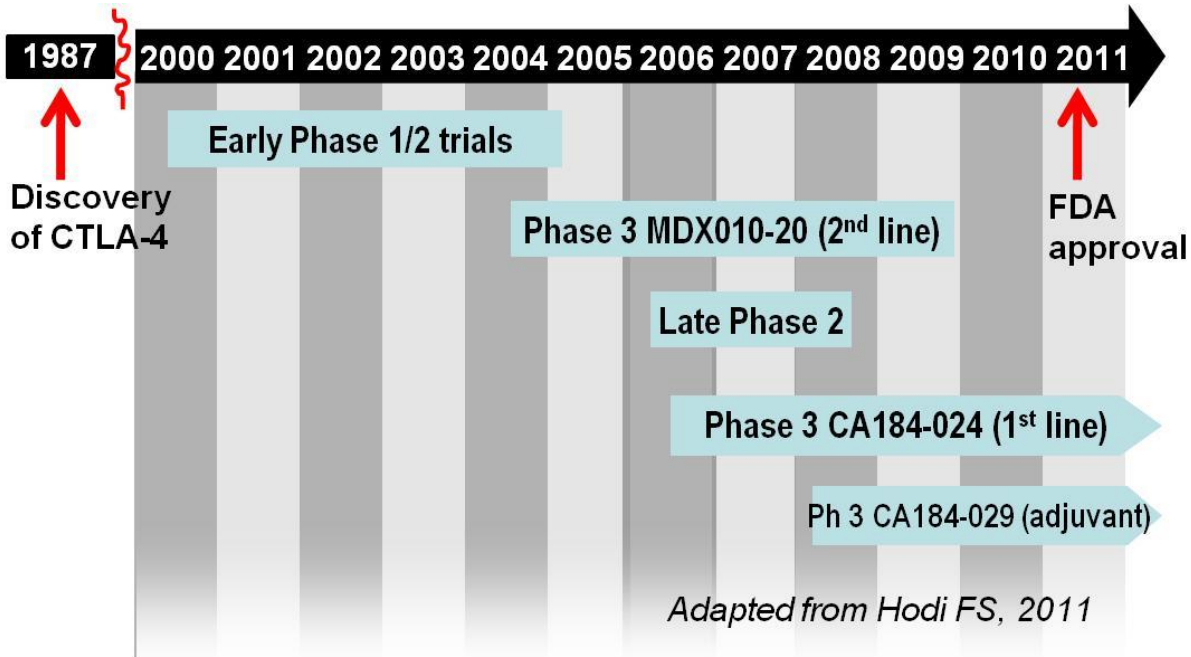


- **Anti-CTLA-4 (ipilimumab), an immunostimulatory monoclonal antibody, improves overall survival in melanoma patients with treatment refractory metastatic disease**

- **This new drug was approved for use by the FDA in March 2011**



Clinical development of anti-CTLA-4 (ipilimumab) for melanoma therapy



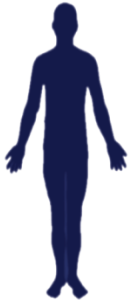
Adapted from Hodi FS, 2011

Future Of Drug Trials



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Patient presents



Tumor Sequenced



Database Query



Match To Drug or Trial



Responses Analyzed,
Trials Refined

Rank	Source	Match	Site/Location
1	University of Texas M.D. Anderson Cancer Center, Houston	High	Houston, TX
2	Memorial Sloan-Kettering Cancer Center, New York	High	New York, NY
3	Johns Hopkins University, Baltimore	High	Baltimore, MD
4	Mayo Clinic, Rochester, MN	High	Rochester, MN
5	China Cancer Institute, Beijing	High	Beijing, China
6	University of Washington Medical Center, Seattle	High	Seattle, WA
7	Massachusetts General Hospital, Boston (MGH)	High	Boston, MA
8	University of California, San Francisco Medical Center	High	San Francisco, CA
9	Ohio State University Medical Center, Columbus, OH	High	Columbus, OH
10	Stanford University Medical Center, Stanford, CA	High	Stanford, CA
11	Harvard Medical School, Boston (HMS)	High	Boston, MA
12	Carver Trust, Cleveland	High	Cleveland, OH
13	University of Colorado Medical Center, Aurora	High	Aurora, CO
14	University of Pennsylvania, Philadelphia	High	Philadelphia, PA
15	University of Michigan Medical Center, Ann Arbor	High	Ann Arbor, MI
16	Northwestern University, Chicago	High	Chicago, IL
17	University of Chicago Medical Center	High	Chicago, IL
18	City of Hope, University of Southern California, Los Angeles	High	Los Angeles, CA
19	University of Illinois at Chicago, Chicago	High	Chicago, IL

**Improve Trial Matching, Reduce Trial Cost,
Increase Success Rate**

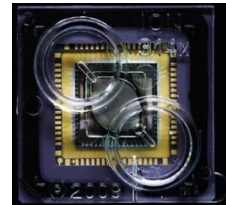


Fast, Cost Effective Sequencing Means You Can Sequence In Real Time



The Personal Genome Machine (PGM™)

- ✓ Scalability – Semiconductor technology
- ✓ Simplicity – The chip is the machine™
- ✓ Speed – Sequence in 2 hours
- ✓ Instrument \$50K
- ✓ Run cost ~\$500

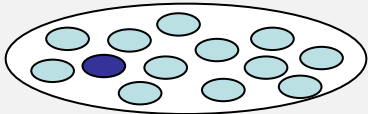


Future Of Cancer Care: Manage Cancer As It Evolves

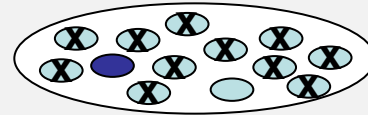


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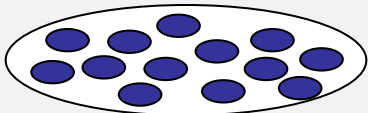
**Step 1: Sequence Deep And
Uncover Genetic Variations**



**Step 2: Treat Variations of
Known Significance**



**Step 4: In Case of Recurrence,
Sequence Again and Treat Emerging
Variants**



**Step 3: Monitor for Recurrence, Using
Tumor Specific Markers. Continue
Treating Until Targeted Variants Are
Absent.**

