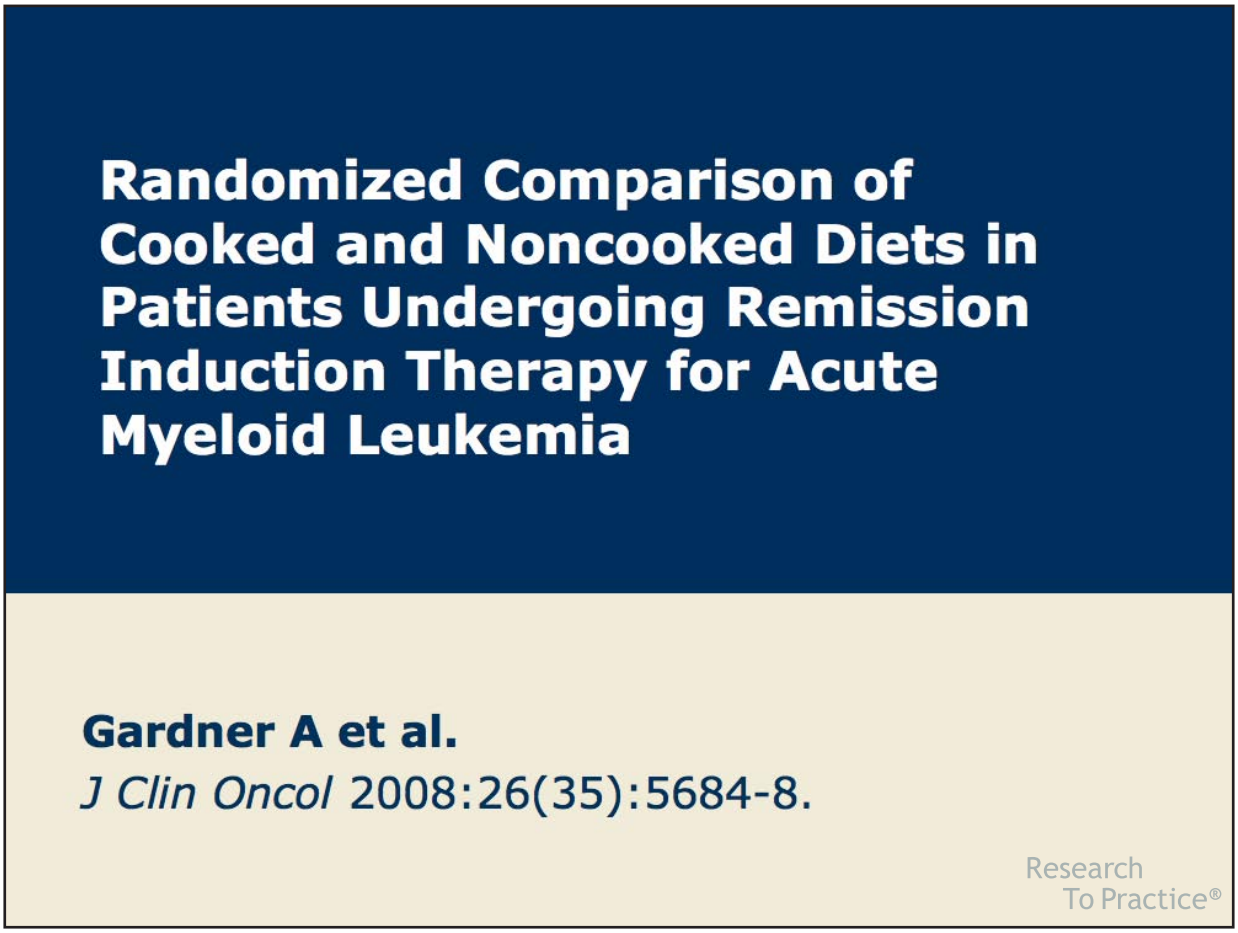
Cooked and Noncooked Diets in Patients with Acute Myeloid Leukemia (AML) Undergoing Remission Induction Therapy

Presentation discussed in this issue:

Gardner A et al. **Randomized comparison of cooked and noncooked diets in patients undergoing remission induction therapy for acute myeloid leukemia.** *J Clin Oncol* 2008;26(35):5684-8. **Abstract**

Slides from the journal article



Introduction

- Majority of neutropenic diets restrict consumption of raw vegetables, fruits and juices due to their possible contamination with Gram-negative bacilli that may lead to life-threatening infections and pneumonia.
- Small trials in children (n = 19) or in adults (n = 20) evaluating neutropenic diets did not provide evidence to support their routine use (*J Pediatr Hematol Oncol* 2006;28:126; *Ann Oncol* 2007;18:1080).
- **Current study objectives (N = 153):**
  - Patients with untreated acute myeloid leukemia (AML) or high-risk myelodysplastic syndrome (MDS) who were about to receive remission induction therapy in a protected environment (PE) were randomized to a diet containing raw fruits and vegetables or a diet containing fruits and vegetables only if cooked.
  - Primary outcomes measured were the rate of major infection and the probability of death

Source: Gardner A et al. *J Clin Oncol* 2008;26(35):5684-8.

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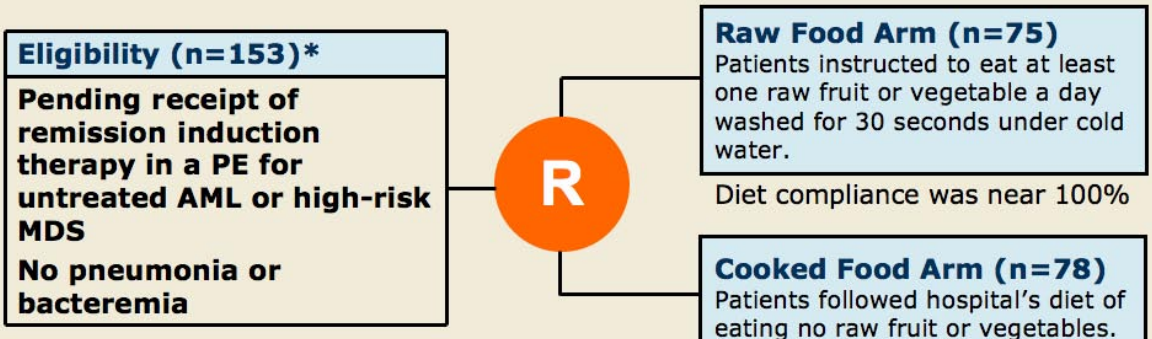
Single-Site, Randomized Comparison of Cooked versus Noncooked Diets in Patients with AML



**53 patients of 206 eligible refused randomization (non-randomized group) and followed hospital's diet (cooked diet)*

All patients received antimicrobial and antifungal prophylaxis. Patients in the two randomized groups were similar with respect to age, early risk of mortality (ERM), chemotherapy received and days at risk.

Source: Gardner A et al. *J Clin Oncol* 2008;26(35):5684-8.

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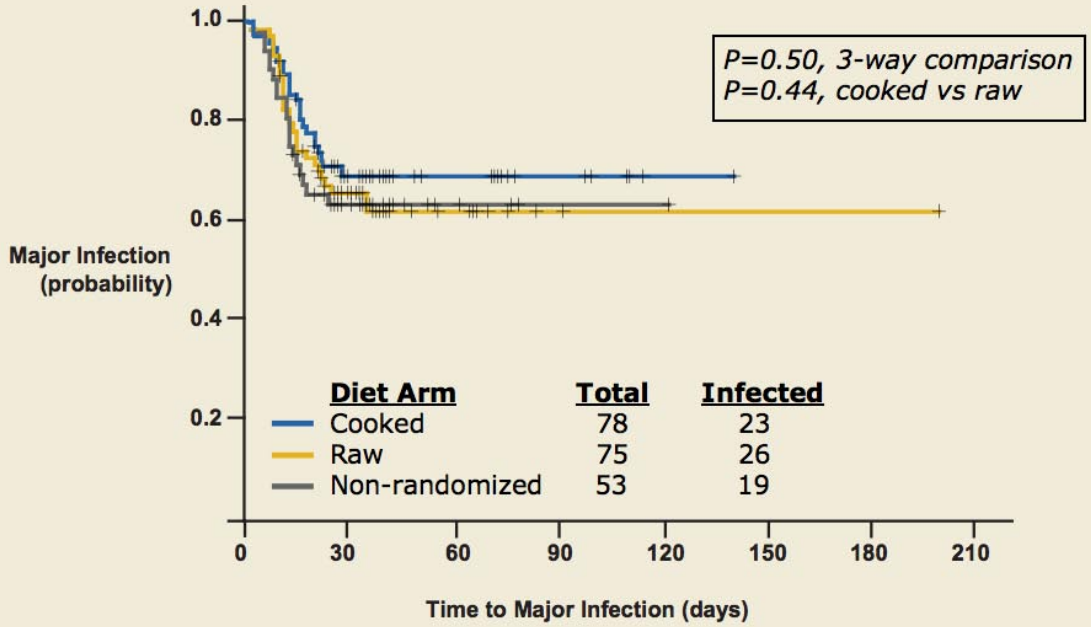
Incidence of Infection or Fever of Unknown Origin (FUO)

Infection and FUO	Raw Food (n=75)	Cooked Food (n=78)	*P*-value
Patients with any major infection[1]	35%	29%	0.60
Pneumonia	**5%**	**15%**	**0.06**
Bacteremia or fungemia	**23%**	**9%**	**0.03**
Pneumonia + bacteremia or fungemia	7%	5%	0.74
Patients with any minor infection	5%	6%	0.99
Patients with FUO	36%	51%	0.07
Patients with major or minor infection	40%	36%	0.62
Patients with infection or FUO[2]	76%	87%	0.09

[1,2]Rate of major infection in the non-randomized group was 36% and rate of infection or FUO was 85%.

Source: Gardner A et al. *J Clin Oncol* 2008;26(35):5684-8.

Probability of Major Infection of Patients In Different Dietary Study Arms



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Selected Organisms Isolated from Patients with Major Infections

Organism	Number of Patients		
	Raw Food	Cooked Food	Non-randomized
Patients with pneumonia (n=28)			
Aspergillis	—	1	—
Unknown	4	11	12
Patients with bacteremia/fungemia ± Pneumonia (n=41)			
E. coli	3	2	—
Enterococcus	5*	2	1
Enterobacter	1	—	1
Coagulase-neg. Staphylococcus	3	1	1
α-Hemolytic Streptococcus	5	1	—
Fusarium	1*	—	—

**One patient had Enterococcus and Fusarium.*

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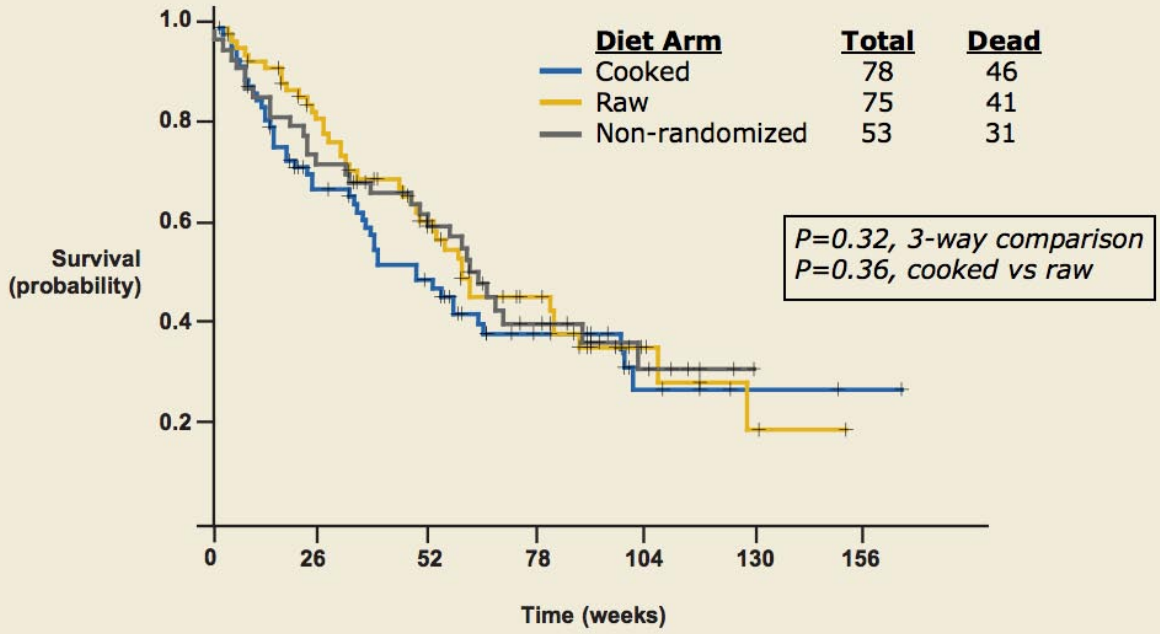
Survival Probability of Patients in Different Dietary Study Arms



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Summary and Conclusions

- In patients with AML and high-risk MDS treated in a PE, a neutropenic diet did not prevent major infection or death.
  - Rates of major infection and death were similar in the raw and cooked fruits and vegetables dietary arms.
- Incidence of bacteremia was higher in the raw fruits and vegetables arm.
  - A substantial part of this difference was reflected in the isolation of organisms that do not reside in the gut and whose presence would not be affected by the cooking of fruits and vegetables.
  - Incidence of FUOs and therefore potentially false-negative bacteremias was higher in the cooked fruit and vegetables dietary arm.
- Results may not be possible to generalize to patients treated outside of a PE or to patients not administered antifungal prophylaxis.

Source: Gardner A et al. *J Clin Oncol* 2008;26(35):5684-8.

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