Northwestern University Feinberg School of Medicine

The use of varenicline to treat nicotine dependence among cancer patients

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Disclosure

- Consultation to Pfizer
- Pfizer provides research support (medication and placebo) for ongoing NCI-funded trials

Prevalence of smoking after cancer diagnosis

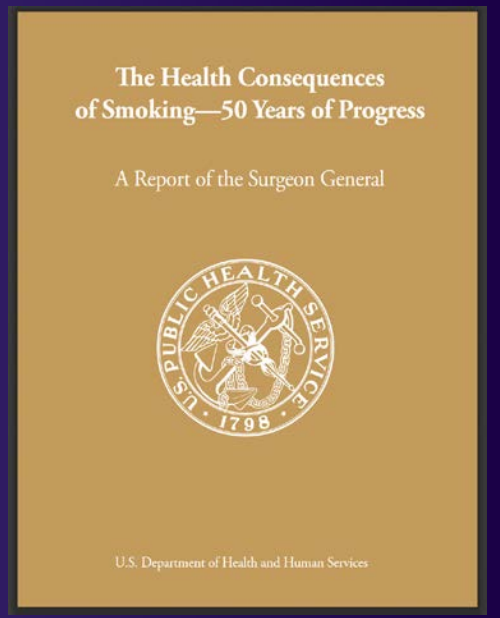
- Similar to the smoking prevalence observed in U.S. general population (14.8%) [CDC NHIS 2012]

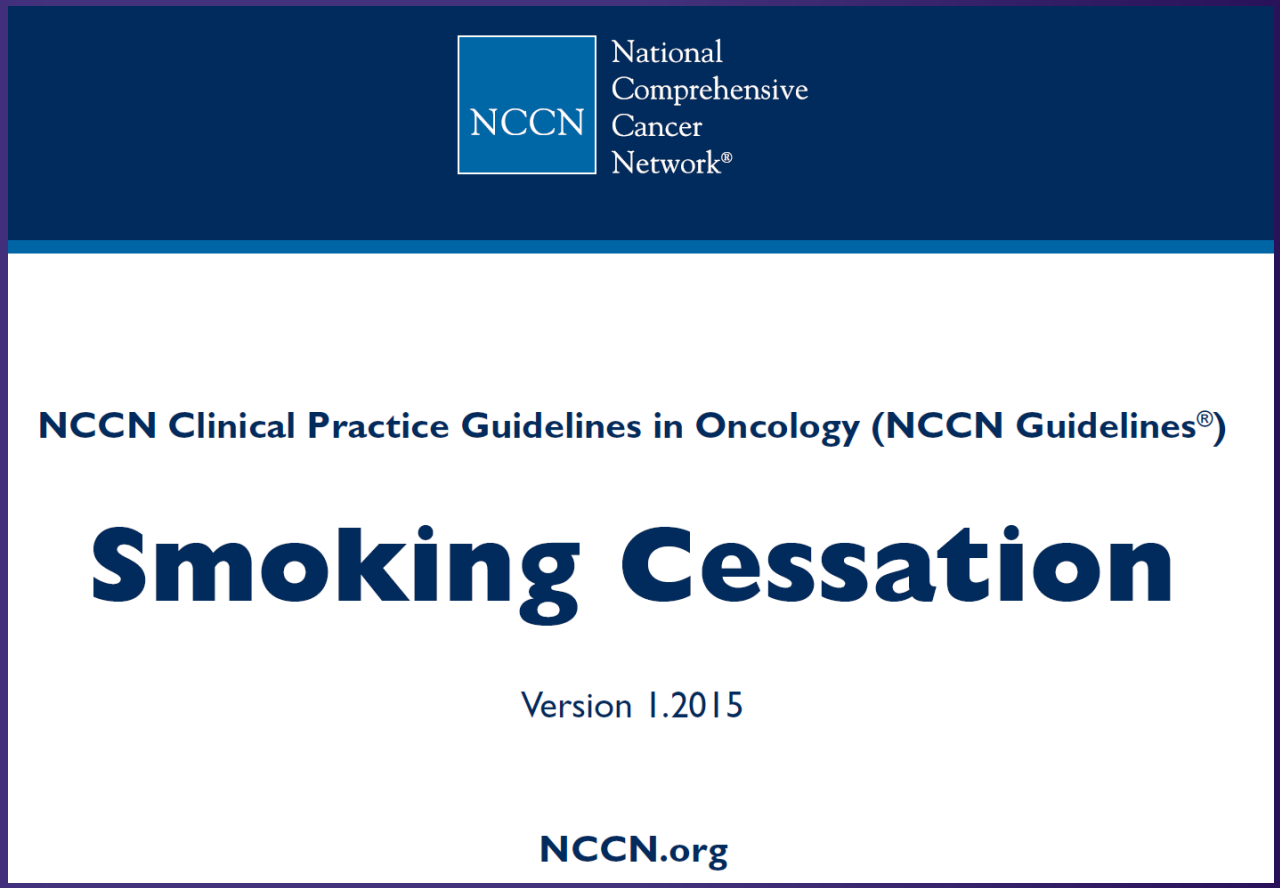
- With advances in cancer care, the population of cancer survivors is rapidly growing, 14 million currently [Howlader et al. 2015 Cancer Stat Rev]

Cancer patients: much to gain from quitting

- Sufficient evidence for a **causal** relationship:
  - Risk for second primary cancers
  - Smoking cessation improves prognosis

- Suggestive evidence for a causal relationship:
  - Reduced response to cancer treatment
  - Risk of recurrence
  - Treatment-related toxicity





First line pharmacotherapy:

- Combination NRT (patch + lozenge/gum/nasal spray)
- Varenicline

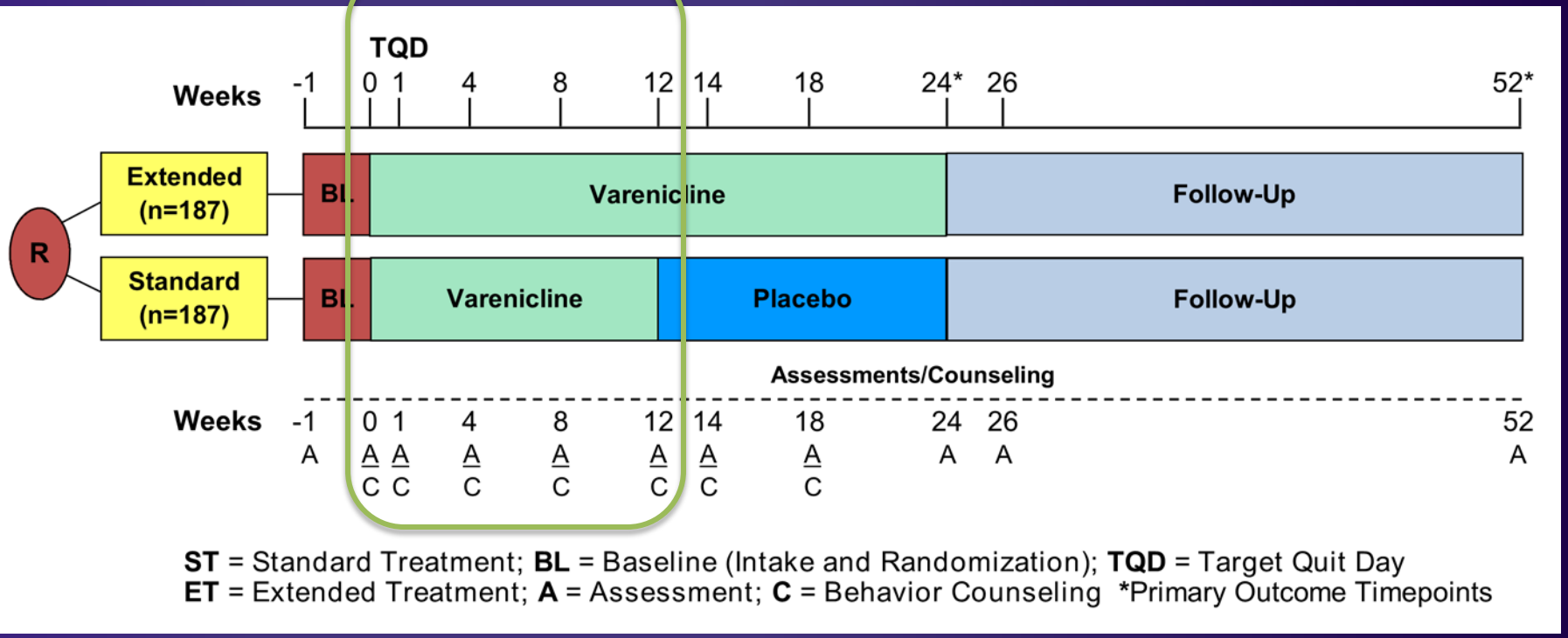
Purpose

- To examine the efficacy of varenicline for helping cancer patients to quit smoking, using data from an open-label phase of an ongoing RCT of extended duration treatment

Treatment rationale

References: Patterson et al. 2009 Biol Psychiatry; Rollema et al. 2009 Biochem Pharmacol; Rhodes et al. 2012 Psychopharm

Study design

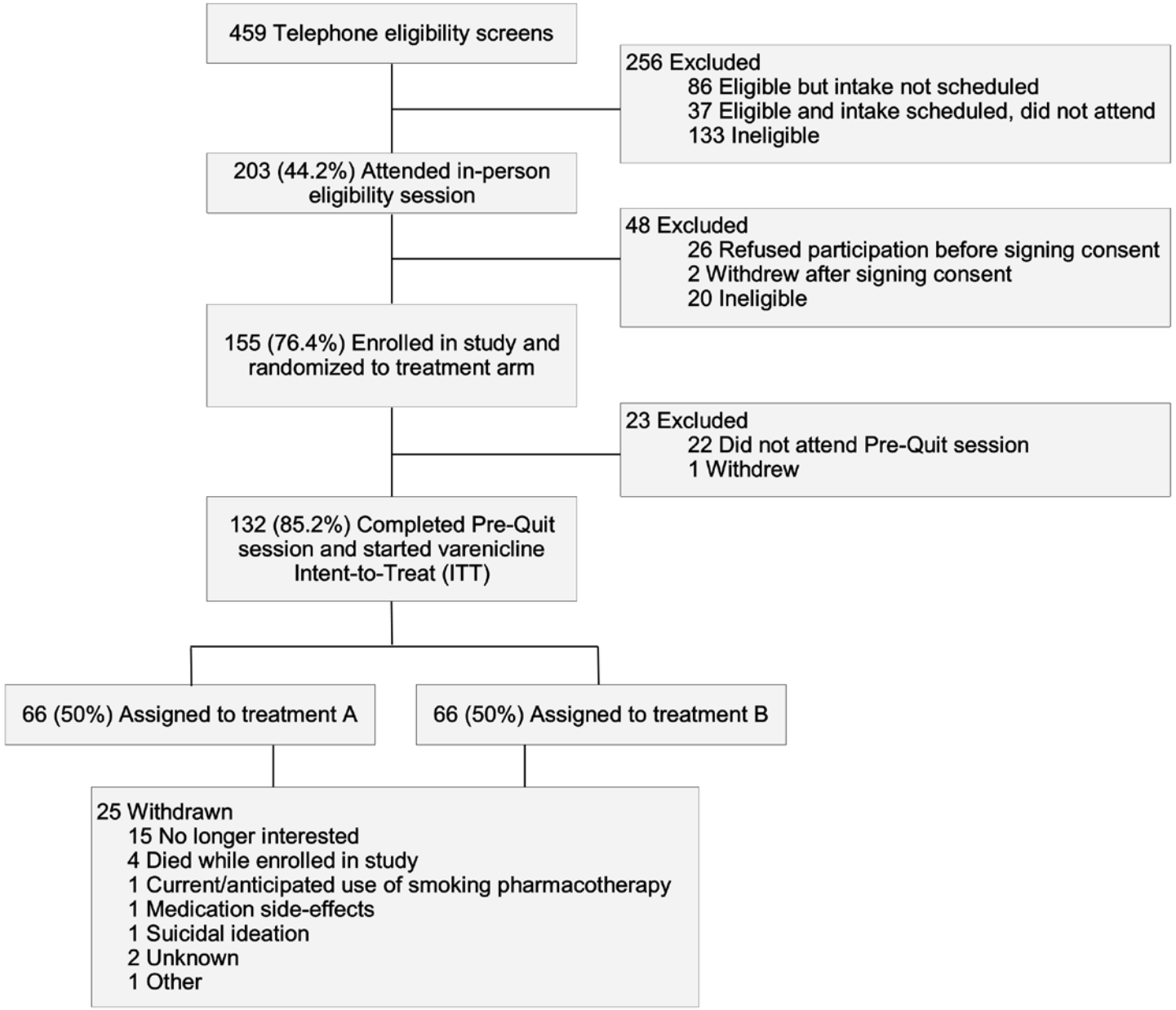


Varenicline: Day 1-3 0.5mg once daily, Day 4-7 0.5mg twice daily, Day 8-84 1.0 mg twice daily

Counseling: 60 mins Pre-Quit (Wk 0), 30 mins TQD (Wk 1), 20 mins Wk 4, 8, 12

Key eligibility criteria

- Inclusion
  - ≥18 years of age
  - Diagnosed with cancer within the past 5 years
  - Reported smoking ≥5 cigarettes per week
- Exclusion
  - Medical contraindications for varenicline (e.g., allergy)
  - Use of other tobacco products or cessation treatment
  - Substance use disorder, lifetime psychotic or bipolar disorder, unstable/untreated depression
  - Suicidality or past suicide attempt



Enrollment Rate
132/306 43.1%

Current N=145

Sample characteristics

Characteristic	Intent-to-Treat N=132	Reached Week 12 N=117	Completed Week 12 N=82
Female sex	50.0%	49.6%	50.0%
Age, mean (SD), years	58.7 (8.9)	58.6 (9.1)	58.9 (8.7)
African American/Black race	31.1%	27.4%	29.3%
Educational level of GED or less	25.0%	23.9%	20.7%
Married	47.7%	47.9%	45.1%
Cancer stage			
Stage 0-IV	40.9%	41.0%	41.5%
Remission	25.8%	28.2%	26.8%
Not specified	33.3%	30.8%	31.7%
Cigarettes smoked/day	14.1 (9.9)	14.5 (8.2)	13.3 (8.1)
Duration of smoking, mean (SD), years	40.5 (11.3)	40.4 (11.6)	39.9 (11.2)
Expired CO at baseline, parts per million	16.8 (5.6)	16.6 (9.6)	15.2 (8.4)

Short-term abstinence

- 7-day point prevalence abstinence at 12 weeks (N=117 who reached Week 12)

Measure	Week 12 (N=117)
Self-reported abstinence	53 (45.3%)
CO-verified abstinence (≤10ppm)	47 (40.2%)

Treatment adherence

- Adherence
  - Medication: proportion of total dose taken during the 12 weeks, as measured by Timeline Followback Method and pill count (>80% of pills; 132/165)
  - Behavior counseling: proportion of participants who completed each of the counseling sessions

Medication adherence

Measure	Week 12 (N=113*)	Week 12 (N=82)
Medication adherence (≥80% of pills)	62 (54.9%)	61 (74.4%)

*113/117 provided valid pill count data

Counseling adherence

Counseling Session	Proportion of Participants Completing Session
Week 1*	128/132 (97.7%)
Week 4	112/129 (86.8%)
Week 8	101/124 (81.5%)
Week 12	82/117 (70.1%)
Overall study retention	**111/132 (84.1%)**

*N=132 completed Week 0 (Pre-Quit session)

Medication side effects

- Frequency of moderate to severe symptoms and mean side effect, as measured by checklist (1 none to 4 severe) and open-ended item

- Serious adverse event: debilitating or required hospitalization

Most common side effects

Side Effect Checklist Moderate (3) to Severe (4) Symptoms	Pre-Quit (N=117)	Week 4 (N=112)	Week 8 (N=101)	Week 12 (N=83)
Fatigue	16 (12.2%)	11 (9.8%)	10 (9.9%)	13 (15.7%)
Sleep problems	11 (8.4%)	11 (9.8%)	9 (8.9%)	12 (14.4%)
Nausea	3 (2.3%)	10 (8.9%)	2 (2.0%)	8 (9.6%)
Constipation	2 (1.6%)	5 (4.5%)	2 (2.0%)	7 (8.4%)

Symptoms increasing severity between Week 0 and 12: Nausea, constipation, abnormal dreams, flatulence, irritability (ps <.05)

28 SAEs: one possibly related to participation (panic attack)

Conclusions

- Findings support the feasibility, safety, and short-term efficacy of varenicline to treat nicotine dependence in cancer patients

- Largest study of varenicline in cancer patients
  - Wide variety of tumor types, diversity (31% Black)

- Abstainers showed a significant decrease in negative affect and cognitive impairment

Research Team & Funding

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