Panel Discussion 4: Decision-making to Include PRO Endpoints in Oncology Trials

FOURTH ANNUAL
PATIENT-REPORTED OUTCOME (PRO) CONSORTIUM WORKSHOP

April 25, 2013 ■ Silver Spring, MD

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Session Outline

- Introduction
- Presentations
  - Bringing the Patient's Perspective in Oncology Research
  - Regulatory Framework for Approving Oncology Products
  - Use of PROs in Oncology Clinical Trials: Sponsor Perspective
  - Update on the Cancer-Fatigue Symptom Severity Assessment - PROOF-C Consortium
- Discussion Panel
- Q & A

Session Participants

- **Moderator**: *Ari Gnanasakthy*
- **Presenters and Panelists**:
  - *Tom Simon* – FDA Patient Representative;
  - *Virginia Kwitkowski, MS, RN, ACNP-BC* – Lead Clinical Analyst, Clinical Team Leader, Division of Hematology Products, CDER, FDA
  - *Margaret Rothman, PhD* – Senior Director, PRO Group, Janssen Pharmaceutical Companies of Johnson and Johnson
  - *Patrick Marquis, MD* – Independent Consultant
- **Additional Panelists**:
  - *Ethan Basch, MD, MSc* – Director, Cancer Outcomes Research Program, University of North Carolina at Chapel Hill
  - *Laurie Burke*
  - *Alicyn Campbell, MPH* - Global Head, Patient Reported Outcomes – Oncology, Genentech, a member of the Roche Group and co-chair of NSCLC WG

Bringing the Patient's Perspective in Oncology Research

Tom Simon

Director, I CARE, Inc.
St. Joseph's Cancer Survivors Network
RTOG Patient Advocate
FDA Patient Representative/Consultant
Lung/General Cancer Support Group Facilitator

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Patient Advocacy and Support

- Patient Advocates are made up of cancer survivors, caregivers, people who care, from all walks of life.

- The role of patient advocate is to represent the perspective of patients and their families in the development and delivery of clinical trials.

Patient Advocacy: Goals

- Infuse the patient perspective throughout development and implementation of clinical trials.
- Develop strategies that accelerate study development (CTs), activation, accrual, participation, and results.
- Team with health care professionals to advance outstanding research in the treatment, care and prevention of cancer.

Examples

Development:
Concepts selection & Protocols review

Approval
Informed Consent: Work for better explanations and approaches

Compliance
Trial Adjustments

Activation

- Accrual Plan: Pinpoints potential pitfalls, including special populations
- Examines trial attractiveness
- Develops plan with suggested tools to help sites accrue effectively
- Input before study opens eliminates possible issues
- Input after study = Triage

Results

- Support Research done on how to give people results
- Publish results more quickly to get to survivors

Patient Reported Outcomes

- Patient-reported Outcome (PRO) is basically a patient's feedback on their feelings or what they are able to do as they are dealing with their disease and its conditions.

- PROs can be measured when patients are undergoing treatment or are participating in a clinical trial for conditions which treatment therapy aims to improve patients abilities to function and to reduce symptoms associated with the condition.

PRO in Cancer Studies

- PROs are pertinent but often secondary assessments.

  e.g., Relief of symptoms, pulmonary or extra-pulmonary

  ➔ Obviously relief of adverse conditions is good and desirous, and in many cases results in the endpoint are reached, but not always.

- PROs complement clinical endpoints like progression-free survival (PFS)

  ➔ PFS is important for the patients, but it does not necessarily mean that all/any adverse conditions are alleviated or symptoms are reduced.

What is important to a Patient?

- Everything is important when fighting a battle that can end up with death. Knowing the game, the players, the field and the possible outcome is important.
- Life, Death, QOL, Side effects, Symptoms, all play a role in a disease and Patient's outlook
- Assessment of Quality of Life (QoL) is important, more so for some than others, but always important.

Endpoints that are important to Patients: Overall Survival, PFS, QOL, **and all others…**depression, anemia, cough, blood clots, fatigue, neutropenia, pain, intimacy, exercise, diet, pulmonary rehabilitation, etc.

Survival

Does extending survival an extra month or two benefit the Patient? Does Patient decide to participate in a CT with the expectation of surviving an additional month or two?

- In the case of LC: YES. The realization that death can be just around the corner is a shock and in rare circumstances a blessing to L C Patients.
- That doesn't mean that the fight does not go on. It means that the patient will do whatever is necessary to stave off the inevitable, and just maybe what is done will be enough to help him/her AND if not, some future L C Patient MAY BE HELPED.
- Each Patient is different and thus each cancer is different. Cancer affects Patients differently.
- Statistics play a part in cancer treatment and how patients address their cancer. Many other factors play a part also.

Involving Patient in CT strategy

- A patient has many things to think about when going through cancer treatment.
  - The PA is often his/her eyes and ears, and help to speak up during the process.
  - A Patient is his/her own Advocate. Patient is the CEO of his/her body.
- Knowledge is a Patient's friend. Knowing what is available and what can be done is a big step in determining the outcome. Patient should determine if a CT/treatment is right, after reviewing all available data.

Involving Patient in CT strategy

- Patients should be involved from the VERY beginning and “ALL IN”
- Involvement in the entire design from concept to CT implementation.
  - What are the burdens on the Patient to participate?
  - Are there unrealistic expectations?
  - Is the endpoint realistic, achievable, manageable?
  - Does it address the patients main fears and expectations?
  - Will patients participate?
- The more input the Patient/PA provide in a CT the more CTs will be addressing the Patient’s symptoms and other outcomes that matter to the Patient.

Concept Review Process

- How will this be better than what currently exists? Why is this trial important to patients?
- What are possible patient burdens, risks or trade-offs?
- What is different than standard treatment?
- What are they looking for in the trial and how important are these goals from a patient perspective?
- What is the clinical significance? (in absolute terms / benefit to a person vs. relative terms for everyone)
- Are there ways to tie in QOL and other patient considerations?
- Does the concept include disparities considerations (i.e., eligibility requirements and care for diverse populations)?

Study Design Review Process

- What will patients consider or shy away from?
- Is standard of care changing? Would this study be irrelevant? To doctors? To patients?
- What is the competition for this trial with this patient population (i.e., other trials, therapies)?
- What else can we learn in this trial with this group of people?
- Is there a survey or quality of life (QOL) assessment?
- Can people crossover to another arm if their cancer progresses?

Eligibility Criteria Review Process

- Are they absolutely necessary for the science in the trial?
- Is this reasonable? Are they too restrictive? Not restrictive enough?
- What about other health problems (i.e., diabetes) and how are they handled?
- What about other populations? Are there health disparities that need to be addressed? For instance: Are some people excluded due to factors like body mass index (BMI), etc.?
- Can people with non-measurable disease participate?
- If not, why? Is there something that can be changed so they would be eligible?
- What is the life expectancy criterion based on? Is it necessary for this study?
- What about the exclusion criteria? Why? Is this really necessary?

Informed Consent Review Process

- What is the value to patients of the question the study is asking? Will answering the question help patients live longer or better?
- Taking into consideration the additional scientific requirements needed for a research study, do you feel that the demands on patients are reasonable when compared to the standard of care
- Do any of the eligibility requirements present an unnecessary burden to patients compared to the standard of care, given the context of a clinical trial?
- Will any of the eligibility requirements make it difficult for diverse populations to qualify for this trial?
- Do you think that this study will work in a community setting?
- Do you think patients will be interested in enrolling?
- Are there specific aspects of the trial that you think will make accrual difficult?
- Is the consent schema designed in a patient-friendly format?
- Please indicate your overall level of support for the study.

___ Enthusiastically Support ___ Support ___ Support With Reservations ___ Do Not Support

- Please provide suggestions for recruitment, outreach, and/or awareness strategies related to this protocol.

Patient Burden

- Burdens of CTs are numerous, especially if the CT is only to extend life a few months or reduce pain several degrees
- Stress, depression, anemia, cough, blood clots, fatigue, neutropenia, pain, intimacy, exercise, diet, pulmonary rehabilitation, etc. and the degree of each come into play.

Summary

- For Patients (who prefer to be called survivors) LIFE/SURVIVAL is all important (life is precious); however, at some point in time some patients (not all) can and will make a decision to STOP all treatment (Side effects are so debilitating that stopping/ending is the best option). This decision is different for each patient. Many factors come into play for this decision to be reached: QOL, Age, Stage in life, Side Effects, Symptoms, Family, Hope (or lack of), etc
- QOL (What's happening from the Patient's perspective): How well is a patient able to perform day-to-day activities important in a patient's life before, during and after cancer treatment. Physical challenges (fatigue, pain), Emotional issues (anxiety, depression), Ability to carry out everyday activities and responsibilities, Relationships with family and friends, Sexual functions, Specific Side Effects (nausea, numbness, sweats).

Summary (cont'd)

- HOPE is all important. If there is a CHANCE, many patients will "TRY ANYTHING" to survive. However, Without HOPE, there is nothing to live for.
- A Caregiver by the side of the patient during the process is very important, in order to ask the right questions, read reports and interpret, so Patient can get the answers needed to make intelligent and better informed decisions.
- All pertinent information should be discussed between the patient and doctor with the caregiver involved if possible. Doctors and Nurses need to be educated to take the time with the patient. Some Hospitals have a Lung Cancer Navigator also, in order to help the patient navigate the system.

Summary (cont'd)

- Drug Labels and discussions with patients must be in laymen's term in order for the patient to understand and comprehend all aspects
- Participation in a Clinical Trial because of criteria and/or restrictions sometimes is difficult or impossible: Example = If a patient has already had a certain drug or treatment may preclude them from participating in a CT. If a CT is a chance for SURVIVAL, the patient will move heaven and earth to participate.
- Paperwork for both the Patient and the Doctor is a problem. Some Doctors will refuse to perform certain measures for a patient because of the paperwork and time needed. Some patients may need to shop for a Doctor in order for them to get a drug for their treatment. If the doctor will do the paperwork the patient will do whatever is necessary.

The Patient's Perspective

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Thank you

Presentations

Regulatory Framework for Approval of Oncology Products

Virginia Kwitkowski, MS, RN, ACNP-BC
Lead Clinical Analyst, Division of Hematology Products
Office of Hematology and Oncology Products
Office of New Drugs
Center for Drug Evaluation and Research
Food and Drug Administration

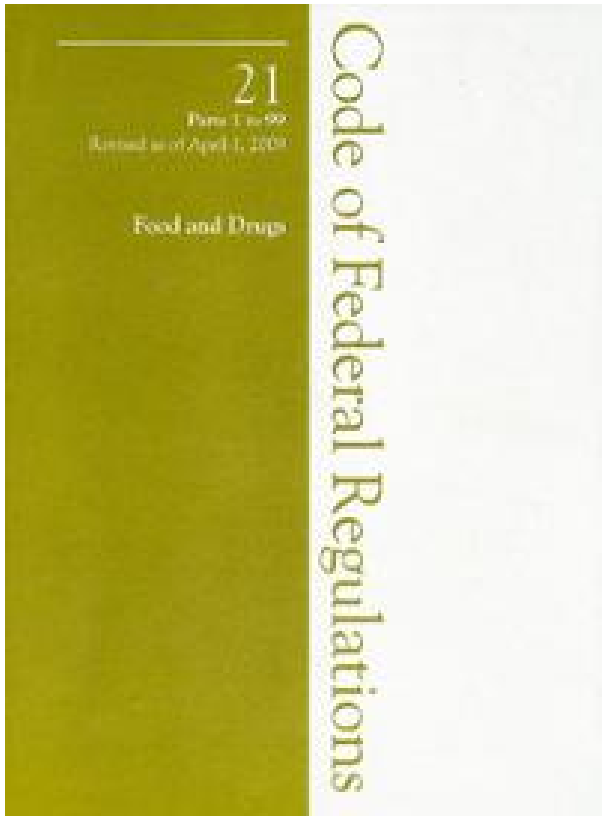
Presentation Outline

- Regulatory Standards
- Pathways to Drug/Biologic Approvals
- Types of Clinical Trial Endpoints
- PROs in Drug Labeling: Successes and Challenges
- Future Goals
- Summary

Regulations Covering Drug Approval

In order to receive FDA approval, the Applicant must:

- provide substantial evidence of effectiveness
- derived from adequate and well-controlled clinical investigations.



Pathways to Approval

Regular Approval:

Substantial evidence of clinical benefit demonstrated prior to approval based on prolongation of life, or an improvement in how a patient feels or functions or an established surrogate for either of the above.

Pathways to Approval

Accelerated Approval:

Must show improvement in a surrogate endpoint reasonably likely to predict CLINICAL BENEFIT (subject to conduct of clinical studies to verify and describe the actual clinical benefit [21 CFR part 314, subpart H and 21 CFR part 601, subpart E]

Labeling Language for Accelerated Approval

"*This indication is based upon response rate. There are no trials verifying an improvement in disease-related symptoms or increased survival with Drug X*"

What Is a Surrogate Endpoint?

- A biomarker that is intended to substitute for a clinical benefit endpoint.
- It measures an earlier effect of a treatment that may correlate to a clinical benefit endpoint, but does not have a guaranteed relationship.
- The endpoint should be:
  - Measurable/Interpretable
  - Sensitive
  - Clinically relevant
  - Establishes biological activity of treatment

What Is Clinical Benefit?

1. Improvement in survival
2. Improvement how a patient feels
3. Improved functioning

Models for Use of Clinical Outcome Assessments to Establish Clinical Benefit in Oncology Indications

1. Reduction in disease-related symptoms

2. Delay of onset of disease-related symptoms
3. Delay of symptom progression

PROs in Drug Labeling: Successes

Product	Concept Measured	Context
Ruxolitinib (Jakafi)	Reduction in Total Symptom Score by Myelofibrosis Symptom Assessment Form	Secondary endpoint; complement to reduction in splenic volume
Mitoxantrone (Novantrone)	Pain/analgesic use in HRPC	Primary evidence of efficacy
Gemcitabine (Gemzar)	Pain/analgesic use/PS/weight gain in pancreatic Ca	Complement to overall survival, time-to-progression

Challenges of Symptom Endpoints

Challenge: Lack of acceptable instruments to measure symptoms

Goal: Collaborative process for instrument development and validation between Industry, Instrument Developers, Patients, and FDA

Challenges of Symptom Endpoints

- ***Challenge:*** Symptom endpoints not evaluable from unblinded trials due to risk of bias. Blinded trials are rare in oncology indications.
- ***Goal:*** *Conduct more blinded trials OR aim for a large effect size where bias would have limited impact*

Challenges of Symptom Endpoints

- ***Challenge:*** Effect of concomitant medications on symptoms

- ***Goals:*** Trials utilizing symptom endpoints must capture concomitant medications

Challenges of Symptom Endpoints

- ***Challenge:*** Missing data leads to lack of interpretability of trial results. Missing data is common in oncology trials due to patient dropout and incomplete instruments.

- ***Goals:*** Avoid missing data. Electronic diaries have been successful in avoiding missing data, even in elderly populations not typically comfortable with electronics.

Challenges of Symptom Endpoints

- Challenge: Single-arm trials are not evaluable for symptom endpoints.

- Goals: More randomized trials are conducted.

Problematic Claims

Health Related Quality of Life
Multi-Domain Concept (physical, social, psychological aspects); not measurable with single item
Difficult for treatment to impact all aspects of HRQOL without decrement in any domain
Is a distal effect of treatment with many potential effect modifiers

Fatigue
Multi-Domain concept ; not measurable with single item
Patients don’t use the term
Problems with instrument content validity do not allow conclusion of benefit.
Clear link between fatigue and disease or treatment not present.

FDA Instrument Review

- FDA can only evaluate an instrument in the context of its intended use (i.e., specific clinical trial, desired labeling claim)
- In other words, there is no such thing as an instrument “validated” for all uses
- The most critical consideration is whether content validity has been established with input from patients in the target population demonstrating that the claimed concept is adequately measured by the instrument
- In the absence of content validity, other measurement properties are inadequate

Desired Future State

- Successful, collaborative process for instrument development and validation
- Industry prioritizes symptom endpoints in clinical trials (consider a separate symptom trial)
- Patient reporting of toxicity appears in product labeling (NCI-PRO-CTCAE)

Conclusions

- FDA strongly supports the inclusion of Patient Reported Outcomes data in product labeling
- There are limitations that make this an uncommon event because of the “substantial evidence” required to support a labeling claim.

Back Up Slides

Use of PROs in Oncology Clinical Trials: Sponsor Perspective

Margaret Rothman, PhD

Janssen Pharmaceutical Companies of Johnson & Johnson

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Overview

- Goal
- Challenges
  - Internal
    - Importance of PRO data
    - Understanding of PRO measurement process
    - Budget and resource allocation
    - Acceptable instruments
  - External
    - Perceptions
      - Importance of PRO data
      - Consistency of reviews
    - Inconsistent global requirements

Goal

- "We believe our *first responsibility* is to the doctors, nurses and patients, to mothers and fathers and all others who use our products and services. In meeting their needs everything we do must be of *high quality*. We must consistently *strive to reduce our costs* in order to maintain reasonable prices ……"[1]
  - The patient perspective is important, especially in chronic disease
  - Patients, clinicians and payers need information that they can use to make health care decisions

[1] Johnson & Johnson Credo

Internal Challenges: Importance of PRO Data

- Many internal researchers acknowledge that the patient's perspective is important to understanding the impact of new therapeutic interventions
  - Wide variation both within and across functions
- PROs are never a primary endpoint in oncology trials and in many cases are low in the hierarchy of secondary or even exploratory endpoints

Internal Challenges: Understanding of the PRO Measurement Process

- Belief that subjective outcomes are inferior to objective outcomes
  - Suspect of any endpoint that cannot be seen or physically measured
- Measurement process is not intuitive
  - Concepts such as reliability and validity are confusing
- Clinical, statistical and regulatory functions not usually trained in measurement of PROs
- The regulatory rules are perceived as unnecessarily complex or too high a hurdle to be worthwhile
  - Not a good track record of success in oncology
- Interpretation of PRO data can be confusing, e.g.
  - Missing data, complex and different statistical techniques are required

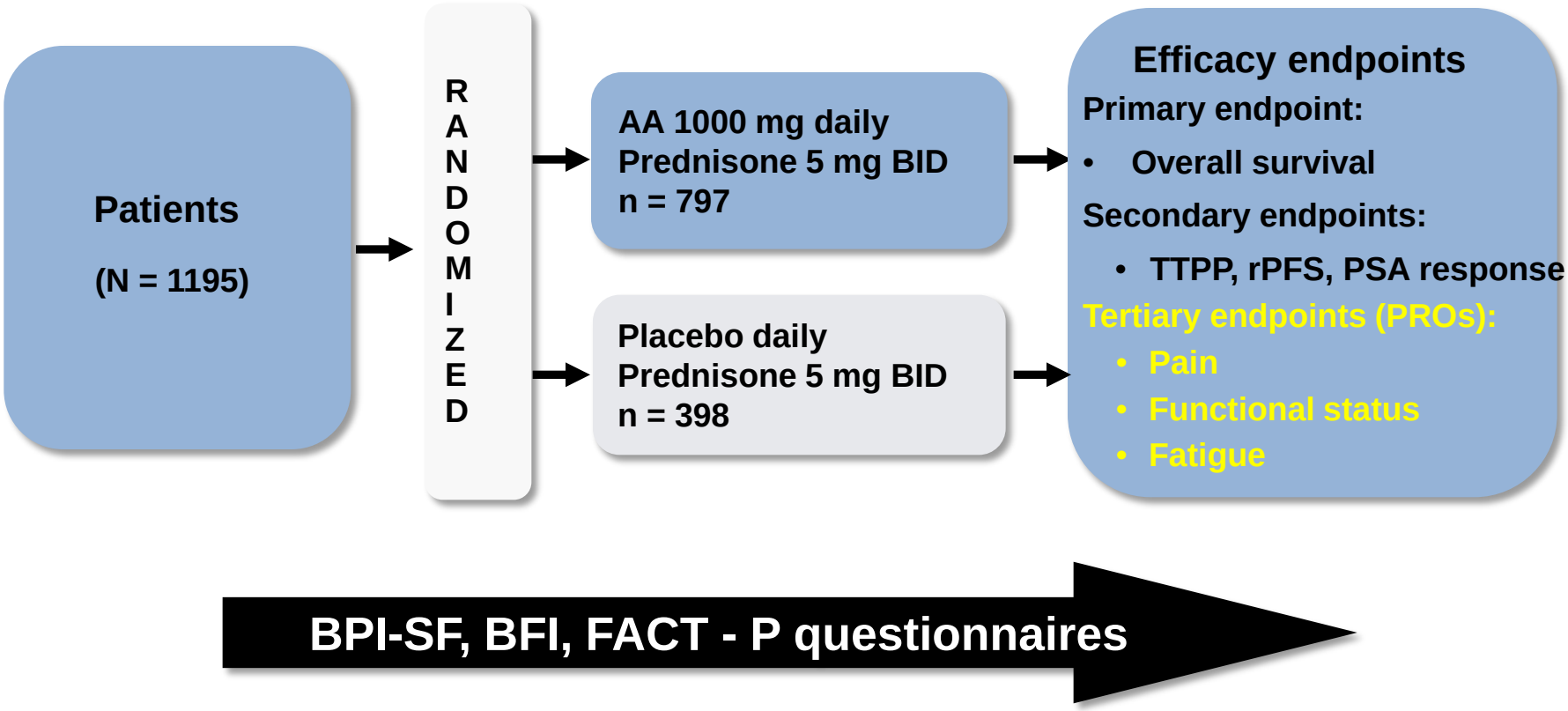
Internal challenges: Resources and timelines

- Downward pressure on budgets, resources and timelines
- PRO assessment is perceived of as time consuming, expensive, and often delaying timelines
  - e.g., e-PRO, translations

Internal challenges: Acceptable instruments not always available

- Very few existing PRO instruments considered acceptable for labeling in oncology
  - e.g., NRS pain severity

Overall Study Design of COU-AA-301 for mCRPC



Prospective data collection: Baseline, Cycle 1 (Day 15), subsequent treatment cycles (Day 1) for BPI-SF & BFI; Day 1 of Cycles 1, 4, 7, 10 and every 6 cycles thereafter until the end of study treatment for FACT-P

de Bono JS, et al. *N Engl J Med* 2011;364:1995-2005

PRO Results: COU-AA-301

PRO Endpoints	P-value
Brief **Pain** Inventory-severity	<0.0001
Brief **Pain** Inventory – interference	<0.0001
Brief **Fatigue** Inventory – severity	<0.0001
Brief **Fatigue** Inventory - interference	0.0096
FACT – **Prostate** Total Score	<0.0001
FACT - **Physical** Well-being	<0.0001
FACT - **Social** Well-being	0.284
FACT – **Emotional** Well-being	<0.0380
FACT – **Functional** Well-being	0.0076
FACT-G Scale	<0.0001
Prostate Cancer Subscale	<0.0001

AUC (t-test) and time to progression/time to deterioriation (chi-square test)/threshold varied by endpoint
COU-AA-301 CSR Janssen 2010
Logothetis et al Lancet Oncology 2012
Sternberg et al, Ann Oncology 2013
Harland et al ECCO/ESMO 2011

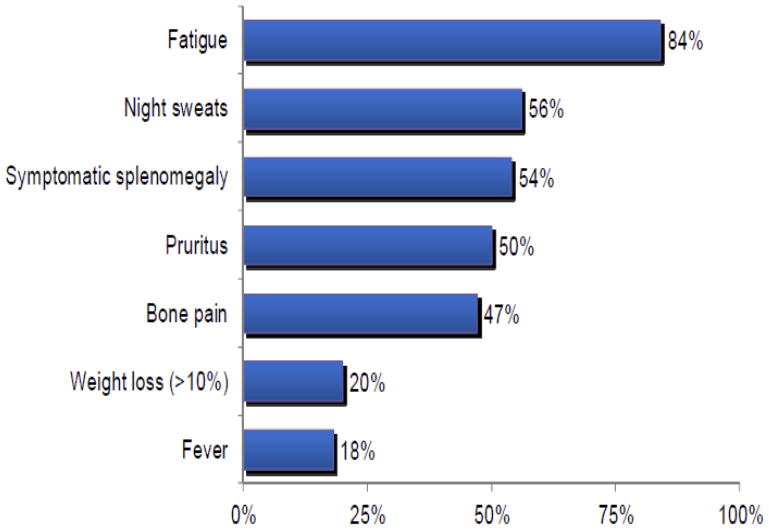
External Challenges: Importance of PRO

- Increasing evidence of importance of patient perspective in oncology
  - Increasing numbers of clinicians and opinion leaders support inclusion of PROs in clinical trials
    - E.g., number of PRO presentations at ASCO
  - FDA, EMA and HTA support have raised level of perceived importance
- Challenges remain
  - "Objective" endpoints almost always considered more important
  - Many trials have not shown differences in PROs

External Challenges: Perceived Inconsistency of Reviews: Jakafi example

- Content validity FDA PRO Guidance 2009
  - "For PRO instruments, items, domains, and general scores reflect what is important to patients and comprehensive with respect to patient concerns relevant to the concept being assessed."

Symptoms of Myelofibrosis*



Symptoms included in MFSAF

Night sweats
Itchiness
Abdominal pain
Pain under ribs
Early satiety
Bone or muscle pain
Degree of inactivity

Mesa et al. Leukemia Research 2009;33:1199-1203

External challenges: Inconsistent Global Requirements

- FDA
  - Disease specific preferred; HRQL not encouraged; emphasis on content validity
- EMA
  - HRQL allowed
- EUnetHTA*
    - Generic
    - Disease specific
    - Utility
  - Concerns
    - Patient burden
    - Costs

EUNETHTA, Methodological guideline for REA of pharmaceuticals: Health-related quality of life (2013)
http://www.eunethta.eu/outputs/methodological-guideline-rea-pharmaceuticals-health-related-quality-life

EMA Label for Zytiga

"The following study endpoints demonstrated a statistically significant advantage in favour of ZYTIGA treatment:

Objective response**:** Objective response was defined as the proportion of subjects with measurable disease achieving a complete or partial response according to RECIST criteria (baseline lymph node size was required to be ≥ 2 cm to be considered a target lesion). The proportion of subjects with measurable disease at baseline who had an objective response was 36% in the ZYTIGA group and 16% in the placebo group ($p < 0.0001$).

Pain**:** Treatment with ZYTIGA significantly reduced the risk of **average pain intensity progression** by 18% compared with placebo (p=0.0490). The **median time to progression** was 26.7 months in the ZYTIGA group and 18.4 months in the placebo group.

Time to degradation in the FACT-P (Total Score): Treatment with ZYTIGA decreased the risk of **FACT-P (Total Score) degradation by 22% compared with placebo** (p=0.0028). The **median time to degradation in FACT-P (Total Score)** was 12.7 months in the ZYTIGA group and 8.3 months in the placebo group."

European Medicines Agency http://www.ema.europa.eu.

DDT# 000001

Update on the Cancer-Fatigue Symptom Severity Assessment

PROOF-C Consortium

Patrick Marquis, MD, MBA

Boston

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Acknowledgements

Many contributors to the project:

- *Mapi Values and Adelphi Values researchers*
- *Consortium Members at various stages: Boehringer Ingelheim, Cephalon, Janssen Pharmaceuticals, Merck, Millennium, Novartis, Sanofi Aventis*
- *Oncology and measurement experts*
- *Clinical sites that allowed us to interview their patients*
- *Patients who provided evidence and their time*
- *FDA Qualification Review Team (QRT)*

Overview of PROOF-C

Patient-Reported Outcomes of Fatigue – Cancer (PROOF-C)

- Established as a consortium research project
- To define cancer-related fatigue (CaF) and determine how it should be measured **from a patient perspective**

It was recognized early that existing PRO instruments were either inadequate to measure CaF or did not meet current FDA standards for use as endpoints to evaluate treatment benefit

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This Presentation is About…

Sharing our experience and challenges	With the research area
	With the qualification process

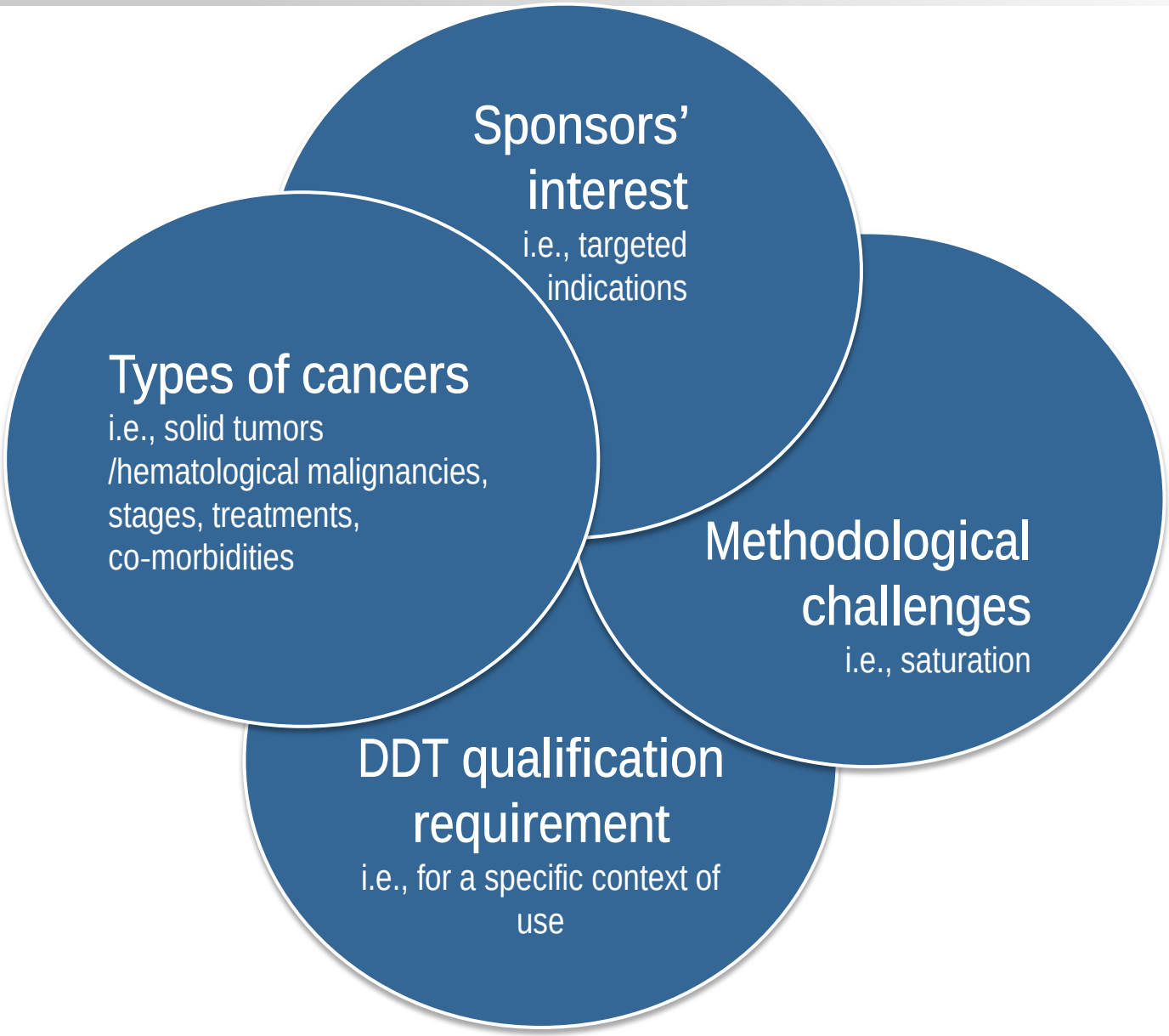
Challenge 1

Context of Use/Definition of Ca-F

Learning From literature review and oncologists

- Appropriate for self-report – tiredness/exhaustion
- Multidimensional – physical, cognitive, emotional
- Multi-causal - cancer, cancer treatment, co-morbidities (e.g., anemia, depression)
- Different from "normal" fatigue:
  - Severity
  - Persistence
  - Unrelieved by rest or sleep
  - Disproportionate to or unrelated to exertion
- Impact on functions
- **Very little input from patients …**

Challenge 2
Context of Use/Targeted Population



Context of Use/Targeted Population

- Matching research objective across cancer types with Drug Development Tools (DDT) qualification process challenging for a "generic symptom" like fatigue

> *"… instrument qualification determined in conjunction with a specific context of use …"*
> *"… including endpoint model, tumor type, stage of disease, treatment history, and other variables important to understand the fatigue experience …"*

- Decision to narrow cancer types, increase sample size for interviews, plan sub-analyses

Challenge 3

Operationalization of the Screener

Learning

Screener derived from the definition(s) of fatigue and input from healthcare professionals

- "Fatigue" not used in the screener to avoid bias
- Complexity when the concepts to identify and explore in the research are the ones used to screen the population
  - Choice of simple terms indicative of a "fatigue" level: feeling exhausted, weak, tired even after a full night of sleep, and at least one functional impairment
  - Screener questioned by the QRT
  - Be ready to amend your screener as information becomes available
  - Understand impact of the screener on your qualitative results
  - Plan for interim analysis and QRT feedback
- Keep it simple!

Challenge 4

Qualitative Analysis

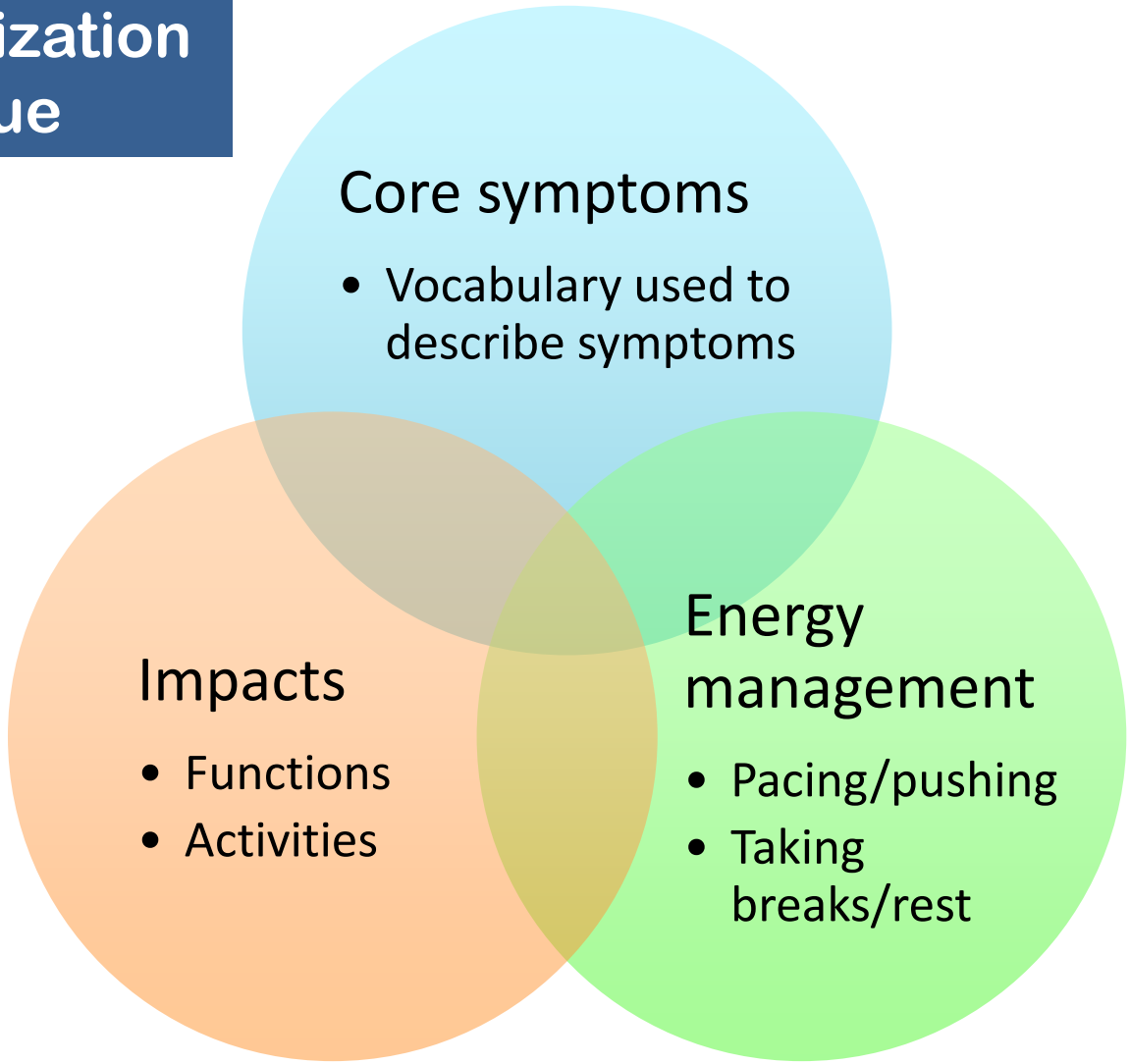
- 91 patients interviewed

  Breast, colorectal, lung, prostate, myeloma (pancreas, ovarian, renal cell)

- Analysis of the whole sample
  - Saturation reached after 60 patients
- Subgroup analyses
  - Cancer types, stages, depression, anemia, age, treatment types, pain, pain medication

The Patient Perspectives (1)

Conceptualization of fatigue



The Patient Perspectives (2)

Concepts of interest Spontaneously reported

- Lack of energy (n=75, 82%)
- Physical and mental tiredness (n=73, 80%)
- Strength/weakness (n=49, 54%)
- Exhaustion (n=35, 38%)
- Wiped/worn out (n=32, 35%)
- Shortness of breath (n=21, 23%)
- Drained (n=20, 22%)

No difference in the core concepts across subgroups but variations in severity

The Patient Perspectives (3)

Use of the term "fatigue"

- Only 35 patients (38.5%) spontaneously reported fatigue and 7 patients (7.7%) after probing
- Many patients had more than one definition
  - Definitions tended to cluster around one or more broad concepts:
    - Energy/lack of energy
    - Tiredness
    - Exhaustion
    - Activity/lack of activity

Drafting the CaF-SSA

- Separating symptoms from impact
  - Symptoms' severity often expressed in terms of their impact
  - Energy expressed negatively
- 13-item symptom instrument
  - Item amendment/addition after the pilot testing
- Some concepts evaluated in relation with exertion
  - At rest, walking indoors, walking outdoors

Progress Made Toward a "Fatigue Claim"

- Concepts of interest identified
- Consistency across analyzed cancer types

Reasonable to use fatigue as a generic term to describe patient experience understanding it is multi-dimensional and cannot be assessed by a single item

---

… label likely to include a description of the core symptoms instead

Study design challenges …

"Regulatory Framework for Approval of Oncology Products"

Next Steps

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Psychometric testing

Sponsorship open! Contact: dallas.hodgson@adelphivalues.com

Thank you to Andrew Yaworsky, Research Manager at Adelphi Values, for his contribution to the project and his help in this presentation

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Discussion and/or Questions?

BREAK 20 Minutes