Lessons Learned from the Jehovah’s Witnesses

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Disclosure

• No conflict of interest related to today’s talk
  – OBI, Bayer, Biotime, Hospira, Abbott, Amgen, Biopure, GSK and Watson
• Aryeh.Shander@EHMC.com
• I am not a Jehovah’s Witness
• I do transfuse (rarely)
• The success of our program is due to all members of my department and others at Englewood Hospital & Medical Center
Bloodless medicine: clinical care without allogeneic blood transfusion
Goodnough LT, Shander A, Spence RK
Transfusion. 2003 May;43(5):668-76
Experience with the Jehovah’s Witness Patients

• 1994 - inception of the program @ E.H.M.C.
• Physicians and other professionals’ attitudes
• Ethical and legal issues - IRB for data base
• Questioning of current transfusion practice
• Low “limits” of hemoglobin - what is compatible with life?
• Rational approach to treatment of severe anemia without blood
Experience with the Jehovah’s Witness Patients

• Expansion of practice repertoire
  – Blood products - Efficacy
  – Use of competing strategies for blood conservation, ANH, AOC, pharmaceuticals etc.

  *Use of a hemoglobin-based oxygen carrier in the treatment of severe anemia*
  *Obstet Gynecol. 2004 May;103(5 Pt 2):1096-9*

  – Establish organized perioperative autologous blood service - AABB

• Expanding the bloodless services to all departments - pediatrics and obstetrics
1994 - inception of the program @ E.H.M.C.

• Establishing steering committee
• Recruitment of a coordinator
• WTBS - Grand rounds Dept of Anesthesiology & Critical Care Medicine
• Time to assess objections, concerns and come up with a plan
• Town Hall meeting -
  – open to all including the community
  – Two riveting clinical scenarios
Physicians and Other Professionals’ Attitudes

• Little knowledge and awareness of
  – Patients’ rights to bodily self-determination
  – Jehovah’s Witnesses
  – “Alternatives” to blood product transfusion

• As resource to other physicians
  – “paralysis of anemia”
  – Dishonesty
  – Letting patients die rather then accept help
Ethical and legal Issues

• Patients rights - on all accounts
  – Significant daily violations in other areas
    • Dying patients and aggressive care
    • Physiologic futility
    • Consent for care

  Informed consent and "reform" Jehovah's Witness patients
  Anesthesiology. 1999 Jun;90(6):1787

• Understanding the difference between:
  – Competency
  – Capacity

• Obstetrical and mature minor

  Are women who are Jehovah's Witnesses at risk of maternal death?

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Questioning of current transfusion practice

- JW patients with good outcome
- Why not have a single standard of care?
- When to transfuse?
  - JW - easy
  - Non JW - very difficult
- Understanding other products
  - FFP - no RCT or any objectives for its use
  - Platelets - Effect and risks
Low “limits” of hemoglobin - what is and is not compatible with life?

- Most survive with low hemoglobin
  - 1.5 - 1.7 grams per deciliter
- Developing protocols for:
  - Oxygen debt (supply dependency)
  - Pharmaceuticals for anemia
  - Aggressive use of EPO
  - Recruitment of microcirculation - “it is not hemoglobin it is perfusion”
What Have We Learned?
Total Number of Inpatients/year

- 1994: 4,500
- 1996: 3,375
- 1998: 2,250
- 2000: 1,125
- 2002: 4,500
- 2005: 3,375
Distribution of Patients

- Inpatient: 21%
- Outpatients: 52%
- ED: 10%
- Referrals: 16%
- Transfers: 2%
Why A Consistent Increase?

• Work of the coordinators getting the word out
• Commitment by a large number of the medical staff and all specialties represented
• Commitment by nurses and allied staff
• “No challenge” on admission and stay
Critical Anemia

Chest (ACCP) 2004
Treatment of Severe Anemia

- **Hgb 8-10** - EPO-α 40k/week, folate 1mg daily, Iron dextran 100/day
- **Hgb 6-8** - EPO-α 20k/day, folate 1mg daily, Iron dextran 100/day
- **Hgb <6** - EPO-α 20k BID, folate 5mg daily, Iron dextran 200/day

- Vitamin C 1000mg / day if taking enteral feeds

- Correction of any Fe deficiency anemia if diagnosed on admission
ICU Patients

Admission Diagnosis

N=203

GI Bleed

Sepsis

No Transfusion

Transfusion

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Hemoglobin

Adm Hb  Lowest Hb  ICU Disch  Hb

No Transfusion
Transfusion

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Acute Physiology and Chronic Health Evaluation Score

No Transfusion: 15.8
Transfusion: 19.21

APACHE II
Predicted ICU mortality for APACHE II 15 – 19: 25%
Length of Stay

P = 0.101

ICU Length of Stay

No Transfusion

Transfusion

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Cardiac Ischemia

P = 0.012

No Transfusion
Transfusion
In the Operating Room

Surgery without blood
Crit Care Med. 2003 Dec;31

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ANH

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Effect of ANH on Average Cell Saver Yield

ANH removed (uni)

0
1
2
3
4

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ASA 2000
Surgeons’ Care

• Screening for and treating anemia
  Detection, evaluation, and management of anemia in the elective surgical patient

• Meticulous hemostasis

• Available sterile suction vs. wall suction

• Willing to spend time consulting with other specialties.

Multidisciplinary management of a Jehovah's Witness patient for the removal of a renal cell carcinoma extending into the right atrium
David M. Moskowitz, MD*, Seth I. Perelman, MD*, Katherine M. Cousineau, CCP, James J. Klein, MD, Aryeh Shander, MD*, Eric J. Margolis, MD, Steven A. Katz, MD, Henry L. Bennett, PhD*, Nate E. Lebowitz, MD and M. Arisan Ergin, MD
Can J Anaesth. 2002 Apr;49(4):402-8
rHuEpo + Fe

Tolerance of anemia
Euvolemia

Minimize blood draws

± PAD + rHuEpo + Fe

IAD
ANH
Divert blood prior to onset of CPB

Autotransfusion
Cell saver
Coronary suckers

Pharmacotherapy
Hemostatic Rx
Antifibrinolytics
DDAVP

CPB
Smaller prime volume
Smaller circuits
Re-infuse as much blood as possible
Hemofiltration/diuresis

Tolerance of anemia
Euvolemia

Surgical
Technique
Hemostasis

Lab-guided transfusion therapy

rHuEpo + Fe

Tolerance of anemia
Euvolemia

Minimize blood draws

Autotransfusion

Re-exploration
Low threshold
Blood Conservation
CABG, valve, CABG + valve
n = 1137
Mortality Rates

The safety and efficacy of "bloodless" cardiac surgery
Future

- > 1500 ANH cases analyzed
- > 2000 cell salvage cases analyzed
- > 200 ICU cases with severe anemia to be included in the previous analysis for publication
- Completion of COBCON II
SUMMARY

• Learned more than treatment of anemia
• Affecting change in attitude and care
• Patient outcome treated without ABT is acceptable
• More data
• Dissemination of the information
• The future: “Blood management” becomes routine everywhere
A physician is obligated to consider more than a diseased organ, more even than the whole man (person) - (she) he must view the man (person) in his (her) world

Harvey Cushing
(Aryeh Shander)
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