Session 4: Highlights from the Medical Literature: Part 1

Learning Objectives

1. Incorporate the findings of two recent studies into your assessment and management of patients who require long-term antithrombotic therapy.

2. Apply the findings of recent studies to your management of male patients with urologic symptoms relating to benign prostatic hyperplasia or overactive bladder.
Session 4

Highlights from the Medical Literature: Part 1

Faculty

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Clinical Professor
Department of Family Medicine
University of California at Irvine
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Dr Kushner is a board-certified family physician with a private practice in Long Beach, California for over twenty years. Her practice specializes in preventive medical care for the entire patient. Dr Kushner is also the director of the Osteoporosis Diagnostic Center in Los Alamitos, California. She is widely published in medical and lay journals including Stroke and the Journal of Women's Medicine. Dr Kushner is the past alternate delegate to the American Academy of Family Physicians (AAFP) from the State of California. She was the first woman president of the Long Beach Medical Association. Dr Kushner has received awards from Soroptimist International as woman of the year and the Clean Spokesperson award from the American Lung Association. Dr Kushner is a past member of the California Tobacco Free Scientific Advisory Committee. She has served as the chairperson for the AAFP Drugs and Devices Committee.

Dr Kushner is a clinical professor of family medicine for the University of California at Irvine. She is also past faculty for the University of Southern California physician assistant program. As a California medical board reviewer, Dr Kushner has helped educate family physicians as to best practices.

John J. Russell, MD
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Family and Community Medicine
Temple University School of Medicine
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Dr John Russell is a graduate of Temple University and the Pennsylvania State University College of Medicine. He completed his family medicine training at Abington Memorial Hospital, where he served as chief resident, eventually joining the faculty in 1993.

Dr Russell is co-editor of LearningLink Clinical Update, a twice-monthly literature review journal for primary care physicians through the American Academy of Family Physicians, which also features a twice-monthly podcast of Update highlights. Dr Russell has worked on creating palm-based guidelines for the American Diabetes Association, the Centers for Disease Control and Prevention, and the Infectious Diseases Society of America.

In 2005, Dr Russell served as contributing editor to Patient Care magazine and co-authored the textbook Dermatology Skills for Primary Care. He has written articles and textbook chapters on a variety of topics and is currently a contributor to and reviewer for American Family Physician. Dr Russell lectures extensively to primary care physicians on a national level, and has won several
resident teaching awards. He has been named several times to *Philadelphia* magazine’s list of “Top Doctors” in family medicine. Dr Russell’s special interests include pediatrics, dermatology, medical history, and bioethics.

**Faculty Financial Disclosure Statements**

The presenting faculty reports the following:

Dr Kushner receives advisory board/speaking honoraria from AstraZeneca, Bristol-Myers Squibb, and Lilly.

Dr Russell receives honoraria as a speaker for Sanofi Pasteur.
Learning Objectives

- Incorporate the findings of 2 recent studies into your assessment and management of patients that require long-term antithrombotic therapy
- Apply the findings of recent studies to your management of male patients with urologic symptoms relating to benign prostatic hyperplasia or overactive bladder

1. Pre-Activity Question

Based on a recent study, which of the following is TRUE regarding patients with pacemakers who have subclinical atrial fibrillation?

1. Their risk of stroke is similar to that found in prior studies of patients with clinical atrial fibrillation
2. Their risk of stroke is independent of their CHADS2 score
3. Their risk of stroke is not influenced by the duration of the episodes of atrial fibrillation
4. They have an increased risk of developing clinical atrial fibrillation

2. Pre-Activity Question

In patients with moderate to severe Alzheimer’s dementia, a recent study demonstrated that combining memantine with donepezil was associated with:

1. Clinically significant improvement in cognitive function
2. Statistically (but not clinically) significant improvement in cognitive function
3. No improvement in cognitive function
4. Mild worsening of cognitive function

3. Pre-Activity Question

Based on a recent study, the FDA approved which of the following regimens for the treatment of BPH symptoms and erectile dysfunction?

1. Sildenafil 50 mg daily
2. Tadalafil 5 mg daily
3. Vardenafil 10 mg daily
4. Finasteride 1 mg daily
Medical Literature Highlights

Part 1

Rocket-AF Trial

Background:
• New anticoagulants are being developed because of the disutility of using warfarin.
• Dabigatran has been approved for stroke prevention in AF.
• In Nov 2011 rivaroxaban (direct Xa inhibitor) was approved for same indication mostly based on this trial.

Rocket-AF Trial

Issue:
• The use of warfarin reduces the rate of ischemic stroke in patients with atrial fibrillation but requires frequent monitoring and dose adjustment.
• Rivaroxaban, an oral factor Xa inhibitor, may provide more consistent and predictable anticoagulation than warfarin, without monitoring.

Rocket-AF Trial

Study Design
• In a double-blind trial, 14,264 patients (1178 sites in 45 countries) with NVAF who were at increased risk for stroke (CHADS2 score ≥ 2) were randomly assigned to receive either rivaroxaban 20 mg daily or dose-adjusted warfarin.
• High risk group, 90% CHADS ≥ 3
• Primary outcome stroke or systemic embolism

Risk of Stroke in AF Patients

CHADS2 Score
Risk of Stroke in AF Patients

CHADS2 Score

<table>
<thead>
<tr>
<th>Clinical Parameter</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congestive Heart Failure</td>
<td>1</td>
</tr>
<tr>
<td>Hypertension</td>
<td>1</td>
</tr>
<tr>
<td>Age &gt; 75 years</td>
<td>1</td>
</tr>
<tr>
<td>Diabetes</td>
<td>1</td>
</tr>
<tr>
<td>Prior Stroke or TIA</td>
<td>2</td>
</tr>
</tbody>
</table>

CHADS2 Risk Score

<table>
<thead>
<tr>
<th>CHADS2 Score</th>
<th>Annual Incidence of Stroke</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1.9 / 100</td>
</tr>
<tr>
<td>1</td>
<td>2.8 / 100</td>
</tr>
<tr>
<td>2</td>
<td>4.0 / 100</td>
</tr>
<tr>
<td>3</td>
<td>5.9 / 100</td>
</tr>
<tr>
<td>4</td>
<td>8.5 / 100</td>
</tr>
<tr>
<td>5</td>
<td>12.5 / 100</td>
</tr>
<tr>
<td>6</td>
<td>18.2 / 100</td>
</tr>
</tbody>
</table>

Rocket-AF Trial: Results

- In the intention-to-treat primary end point:
  - Rivaroxaban group (2.1% per year)
  - Warfarin group (2.4% per year)
- P<0.001 for noninferiority; P = 0.12 for superiority

Rocket-AF Trial: Results

- Major and non-major clinically relevant bleeding events were similar in both groups
  - Intracranial Bleeding
    - Rivaroxaban group (0.5% per year)
    - Warfarin group (0.7% per year)
  - Fatal Bleeding
    - Rivaroxaban group (0.2% per year)
    - Warfarin group (0.5% per year)

Rocket-AF Trial: Conclusion

- In patients with atrial fibrillation, rivaroxaban was non-inferior to warfarin for the prevention of stroke or systemic embolism
- No significant differences in bleeding risk between rivaroxaban and warfarin

Rocket-AF Trial: Caveats

- In Rocket-AF, the warfarin-treated patients spent just 57.8% of time in therapeutic range which was lower than in other trials
- In the 28-day period after rivaroxaban was stopped (end of study) in Rocket-AF and patients were transitioned back to warfarin, there was an increased risk of stroke.
Rocket-AF Trial: Clinical Implications

- There are now FDA approved alternatives to warfarin available to prevent strokes in patients with AF

Deep Vein Thrombosis and Pulmonary Embolus
Reducing Recurrence Risk

Einstein DVT Study

Rivaroxaban*

- Rivaroxaban 15 mg BID X 21 days, then 20 mg daily vs.
- Enoxaparin 1mg/kg BID > 5d, bridge to warfarin INR 2.0-3.0
- Followed for 3, 6, 12 mos.
- End Point: recurrent symptomatic DVT
- Rivaroxaban 2.1%  Enox/warfarin 3.0%

*Rivaroxaban approved in November 2012 for treating DVT or PE, and to reduce the risk of recurrent DVT and PE following initial treatment.

Clinical Implications

Consider the future possibility:

- Patient with a VTE could potentially be diagnosed and treated from your office with 3 months of oral therapy and with no need for lab monitoring

Einstein PE Study

Rivaroxaban*

- Rivaroxaban 15 mg BID X 21 days, then 20 mg daily vs.
- Enoxaparin 1mg/kg BID > 5d, bridge to warfarin INR 2.0-3.0
- Followed for 3, 6, 12 mos.
- End Point: recurrent symptomatic VTE
- Rivaroxaban 2.1%  Enox/warfarin 1.8%

*Rivaroxaban approved in November 2012 for treating DVT or PE, and to reduce the risk of recurrent DVT and PE following initial treatment.

Other Issues

- Can’t assess adherence or failure without assay to monitor
- Can’t easily reverse anticoagulant effect
- Renal excretion – long term safety issues
- Possible ↑ MI risk
- Cost
Other Issues

- New drugs…..use them quickly, while they are still felt to be effective
- And before the side effect profile becomes well known

An antidote for new anticoagulants?

Your resident mentions that he heard there may be antidotes for the new anticoagulants.

What do you tell him?
1. Dabigatran effect may be reversed with FFP
2. Dabigatran effect may be reversed with prothrombin complex concentrate (PCC)
3. Rivaroxaban effect may be reversed with FFP
4. Rivaroxaban effect may be reversed with PCC

Reversal of Rivaroxaban and Dabigatran by Prothrombin Complex Concentrate


Anticoagulation Reversal: Background

- Traditional anticoagulants (heparin and warfarin) have drawbacks, e.g. narrow therapeutic window, interactions, need for frequent monitoring, etc.
- Newer anticoagulants, approved in atrial fibrillation, provide added options with promise of similar or better efficacy, less interactions, and no monitoring
  - Dabigatran (direct thrombin inhibitor)
  - Rivaroxaban (direct Xa inhibitor)

Anticoagulation Reversal

Question:
Could prothrombin complex concentrate (PCC) reverse the anticoagulant effect of dabigatran and rivaroxaban?
Anticoagulation Reversal

PCC studied:
- A human prothrombin complex product from the Netherlands, derived from human plasma
- It contains a large amount of the procoagulation factors II, VII, IX, and X, as well as the natural anticoagulants protein C and S and antithrombin

Anticoagulation Reversal

Study design:
- Randomized, double-blind, placebo-controlled study
- 12 healthy male volunteers received rivaroxaban 20 mg twice daily (n=6) or dabigatran 150 mg twice daily (n=6) for 2 1/2 days
- This followed by either a single bolus of 50 IU/kg PCC or a similar volume of saline

Anticoagulation Reversal:

Results Rivaroxaban

The PT was significantly prolonged by rivaroxaban. Immediately after the infusion of PCC, the PT completely normalized

Anticoagulation Reversal:

Results Dabigatran

- The APTT was significantly prolonged by dabigatran.
- Neither PCC or saline infusion had any effect on the APTT.
- Same lack of reversal seen after PCC infusion when measuring endogenous thrombin potential (ETP), thrombin time, and ecarin clotting time.

Anticoagulation Reversal:

Conclusions

- Prothrombin complex concentrate (PCC) neutralized the anticoagulant effect of rivaroxaban, a factor Xa inhibitor.
- PCC had no effect on dabigatran, a direct thrombin inhibitor at PCC study dose (50 U/kg).
Anticoagulation Reversal: Caveats

- The study population all young healthy men with normal renal function
- The particular PCC product studied might yield different results from other PCC products
- The effect of PCC has yet to be confirmed in patients with bleeding events who are treated with rivaroxaban

Anticoagulation Reversal: Clinical Implications

- Although serious bleeding is rare with the use of the new anticoagulants, the lack of an antidote has been an issue for clinicians
- Supportive strategies have been advocated in such situations while waiting for these short half-life drugs to clear
- Clinicians might feel more confident using rivaroxaban, if safe antidote is available

Case: 67-year-old Male on Warfarin

Your 67-year-old male patient is on warfarin for stroke prevention in atrial fib. His dose has been the same for the past 12 months. He doesn’t like coming in for blood work every 4 weeks. You recall a study that suggests it might be safe in his situation to move his INR recheck appointments to:

1. Every 6 weeks
2. Every 8 weeks
3. Every 10 weeks
4. Every 12 weeks
5. Every 16 weeks

Warfarin Dose Assessment Every 4 Weeks Versus Every 12 Weeks in Patients With Stable International Normalized Ratios


INR Testing Frequency

- Background:
  - Clinical guidelines differ on the optimal interval for prothrombin monitoring (limited data)
  - A 1998 British guideline suggests that PT monitoring can be done up to every 12 weeks for very stable patients
  - Underpowered Italian study stated no difference between 4 and 6 week testing

INR Testing Frequency

**Question:** Is assessment of warfarin dosing every 12 weeks as safe as assessment every 4 weeks?

- 250 patients with unchanged warfarin dosing for at least 6 months randomized to assessment at 4 week or 12 week intervals (noninferiority trial)
- Both groups had nurse visits every 4 weeks
- Nurses following those in the 12 week group were given sham INR results (in range) in 2 of the 3 four week visits

INR Testing Frequency

Outcomes measured:
• Percentage of time in the therapeutic range (primary outcome)
• Number of extreme INRs, changes in maintenance dose, major bleeding events, objectively verified thromboembolism, and death (secondary outcomes)

INR Testing Results

Patients whose warfarin dose was assessed every 12 weeks:
• Fewer dosage changes, and fewer extreme INRs that were >4.5 or <1.5
• These results demonstrate that the frequency of assessing warfarin dosing can be substantially reduced in stable patients

INR Testing Conclusions

Assessment of warfarin dosing every 12 weeks seems to be safe and noninferior to assessment every 4 weeks

INR Testing Caveats

➢ Patients in the group that had dose assessments every 12 weeks had supportive contact with clinic staff every 4 weeks
➢ The findings should not be interpreted to mean that extending INR monitoring to every 12 weeks is proven safe without more frequent contact with clinic staff

INR Testing Clinical Implications

➢ Interval of testing in very stable patients on warfarin can be safely extended
➢ This might reduce the hassle factor for AF patients who consider switching to one of the “newer” anticoagulants to avoid testing
Case: 76-year-old Male with Pacemaker

Patient had a dual chamber pacemaker placed 3 months ago for sinus-node disease and has since been asymptomatic.

- Meds: Lisinopril for HTN and metformin for DM
- His pulse is 72, regular rhythm.

Patient with Pacemaker

- On a routine check of his pacemaker yesterday, he was incidentally noted to have experienced 6 episodes of atrial rate >190 since it was placed three months ago.
- These ranged in duration from 8 minutes up to a maximum of 16 hours.

Risk of Stroke in AF Patients
CHADS2 Score

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</tr>
<tr>
<td>Prior Stroke or TIA</td>
<td>2</td>
</tr>
</tbody>
</table>


Patient with Pacemaker

What is his risk of stroke in the next year?
1. 0.5%
2. 1.2%
3. 3.8%
4. 6.6%

Question

In patients with pacemakers or ICDs, does the detection of subclinical atrial tachyarrhythmia signify an increased risk of stroke?

Subclinical atrial fibrillation and the risk of stroke

Background

• 25% of all ischemic strokes are cryptogenic, and
  subclinical atrial fibrillation is suspected to be a possible
  cause in many of these
• The prevalence and prognosis of subclinical atrial
  fibrillation has been difficult to assess

Background

• More than 400,000 pacemakers and ICDs implanted
  each year in North America
• These have the capacity to record episodes of atrial
  tachyarrhythmia
• The significance of pacemaker detected subclinical
  atrial fibrillation is unknown

Subclinical Atrial Fibrillation

• 2,580 patients with HTN who had pacemaker (95%) or
  ICD (5%) placed
• Episodes of atrial rate >190 lasting at least six
  minutes recorded for 1st three months → followup for
  2.5 years for ischemic stroke or systemic embolism

Subclinical Atrial Fibrillation

• By 3 months, subclinical atrial tachy had occurred in
  10.1% of patients.
• Over the next 2.5 years, the risk of stroke was doubled in
  these patients (and the risk of clinical atrial fib increased
  5 fold) compared to those without atrial tachy.

Subclinical Atrial Fibrillation

Results

The risk increased by
CHADS2 Score

<table>
<thead>
<tr>
<th>CHADS2 Score</th>
<th>Stroke risk %/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.56</td>
</tr>
<tr>
<td>2</td>
<td>1.29</td>
</tr>
<tr>
<td>≥ 3</td>
<td>3.78</td>
</tr>
</tbody>
</table>

The risk was not as great as in studies of clinical atrial fibrillation:

<table>
<thead>
<tr>
<th>CHADS2 Score</th>
<th>Stroke risk this study %/yr</th>
<th>Stroke risk in clinical AF study %/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.56</td>
<td>2.8</td>
</tr>
<tr>
<td>2</td>
<td>1.29</td>
<td>4.0</td>
</tr>
<tr>
<td>≥ 3</td>
<td>3.78</td>
<td>&gt;6.4*</td>
</tr>
</tbody>
</table>

* The risk of stroke is 6.4%/yr for CHADS score of 3 (higher for score >3)
Subclinical Atrial Fibrillation

Results

Those who had episodes lasting >17.7 hours had a higher risk of stroke (4.89% per year) than those in lower quartiles of duration.

Caveats

- Although the risk of stroke is increased in patients with subclinical atrial tachy in this study, it is not as high as that in other studies with clinical atrial fibrillation.
- There are currently no randomized trials of anticoagulation in this group.

Clinical Implications

Patients who exhibit atrial tachy on quarterly pacemaker reports should be followed more carefully for:

a) progressive ↑ in frequency/duration of events or,
b) clinical atrial fibrillation.

In those with CHADS of 3 or greater and episodes over 17 hrs, it would be reasonable to consider anticoagulation.

Blood Pressure Goal after Stroke

A 67-year-old female with HTN presents to your office 2 weeks after a small lacunar infarct. She has mild residual weakness on her right side but is otherwise well.

- Meds include ASA, lisinopril, and HCTZ
- BP is 134/74

Female s/p Stroke

How would you manage her BP to best reduce her risk of recurrent stroke?

1. Increase meds to get systolic BP <120
2. Increase meds to get systolic BP <130
3. No change in meds

Level of systolic blood pressure within the normal range and risk of recurrent stroke

**Poststroke Blood Pressure Target**

**Background:**
- National guidelines suggest a target BP of <120/80 poststroke, but limited data to support this level of reduction

**Poststroke BP Target**

**Question:**
- What is the relationship between systolic BP in the high-normal vs. low-normal range with clinical outcomes in patients who have had a stroke?

**Poststroke BP**

**Methods:**
- Post-hoc observational analysis of PROFESS trial
  - > 20,000 patients with stroke randomized 2 x 2 to:
    - ASA / extended release dipyridamole vs clopidogrel; and (telmisartan vs. placebo)
  - Mean age 65 years; 36% female

- Excluded: hemorrhagic stroke, severe disability poststroke
- Almost all were non-cardioembolic: about half small vessel, 30% large vessel, and most of the remainder cryptogenic

**Poststroke BP**

- Baseline BP was checked at hospital discharge or in clinic at 1 week, then at 1, 3, and 6 months and q 6 months
- Mean follow-up 2.5 years

<table>
<thead>
<tr>
<th>SBP Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;120</td>
<td>Very Low-Normal</td>
</tr>
<tr>
<td>120-129</td>
<td>Low-Normal</td>
</tr>
<tr>
<td>130-139</td>
<td>High-Normal</td>
</tr>
<tr>
<td>140-149</td>
<td>High</td>
</tr>
<tr>
<td>&gt;150</td>
<td>Very High</td>
</tr>
</tbody>
</table>
Poststroke BP

- **Primary outcome:**
  - First recurrence of stroke
- **Secondary outcome:**
  - Composite of stroke, MI, Vascular death


Poststroke BP

- The four randomized treatment groups did not differ in outcome, thus were combined for this analysis
- The groups differed slightly at baseline (more DM, HTN, use of HTN rx in the higher BP groups), and outcomes were thus adjusted for these and other variables


Poststroke BP Results

<table>
<thead>
<tr>
<th>SBP</th>
<th>Stroke ±/yr</th>
<th>Composite Endpoints ±/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;120</td>
<td>8.0</td>
<td>12.5</td>
</tr>
<tr>
<td>120-129</td>
<td>7.2 *</td>
<td>11.4</td>
</tr>
<tr>
<td>130-139</td>
<td>6.8</td>
<td>10.2</td>
</tr>
<tr>
<td>140-149</td>
<td>8.7</td>
<td>13.1</td>
</tr>
<tr>
<td>≥ 150</td>
<td>14.1</td>
<td>19.8</td>
</tr>
</tbody>
</table>

* not significant difference from 130-139

These differences in outcome persisted after adjustment for age, DM, CHF, and multiple other variables

Poststroke BP Results

- The J-shaped relationship between BP and outcome was most prominent within the first 180 days (but persisted thereafter)

Poststroke BP Conclusion

- Among patients with recent non-cardioembolic stroke, systolic BP levels in the 120-139 range are associated with lower risk of recurrent stroke as compared to BP levels outside of this range

Poststroke BP: Clinical Implications

• In patients with a recent non-cardioembolic ischemic stroke, a systolic BP in the range of 120-139 seems to be an optimal target

• There does not seem to be any advantage to lower BP levels within this range (and certainly not for <120), especially within the first six months

Case: Female Undergoes DXA Screening

• A 67-year-old female undergoes osteoporosis screening with DXA and is found to have osteopenia. Her T-scores at the femur neck and total hip are both -1.6.
• She is on appropriate vitamin D and calcium and has no other osteoporosis risk factors.
• Relevant PMH: TAH age 46, ERT for four years after menopause at age 50.

DXA Screening

How long would you wait before retesting her bone density?
1. 1 year
2. 2 years
3. 3 years
4. 5 years
5. 10 years

Bone-Density Testing Interval and Transition to Osteoporosis in Older Women


Bone Density Testing Intervals

Question:
At what rate do women with varying degrees of osteopenia on bone mineral density (BMD) testing progress to osteoporosis?

Bone Density Testing Intervals

Background:
• Current osteoporosis screening guidelines advise BMD screening for women aged 65 and older.
• None of these specify a screening interval for repeating the BMD which is based on data from a longitudinal cohort.
Bone Density Testing Intervals

A prior prospective analysis suggested that repeating BMD at intervals sooner than 8 years after initial testing did not improve fracture prediction.

Methods:
• 4,957 women aged 67 and older recruited from four sites in US
• BMD checked at baseline and years 2, 6, 8, 10, and 16
• Excluded: Hip replacements, osteoporosis on baseline study

Outcome of interest was time required for 10% of women to transition to a BMD of osteoporosis (T < -2.5) before:
1. Incident hip/clinical vertebral fx or
2. Receiving treatment for osteoporosis

<table>
<thead>
<tr>
<th>T-Score</th>
<th></th>
</tr>
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<tbody>
<tr>
<td>Normal</td>
<td>&gt; -1.00</td>
</tr>
<tr>
<td>Mild osteopenia</td>
<td>-1.01 to -1.49</td>
</tr>
<tr>
<td>Moderate osteopenia</td>
<td>-1.50 to -1.99</td>
</tr>
<tr>
<td>Advanced osteopenia</td>
<td>-2.00 to -2.49</td>
</tr>
</tbody>
</table>

Time required for 10% of women to reach BMD T-score -2.5 or less:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal BMD</td>
<td>17.4</td>
</tr>
<tr>
<td>Mild osteopenia</td>
<td>16.5</td>
</tr>
<tr>
<td>Moderate osteopenia</td>
<td>4.6</td>
</tr>
<tr>
<td>Advanced osteopenia</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Unadjusted Cumulative Incidence of Osteoporosis According to Baseline T-Score Range

BMD Testing Intervals Results

- 121 women (2.4%) had a hip/clinical vertebral fx prior to reaching osteoporosis on BMD.
- Time required for 2% of women to experience fx was >15 yrs in those with normal BMD/mild osteopenia and about 5 yrs for those with moderate/advanced osteopenia.


BMD Testing Intervals Results

- Age was a factor in determining the testing intervals.
- For example, although the overall testing interval was around 5 years for those with moderate osteopenia, for women aged 85 and older it was closer to 3 years.


BMD Testing Intervals Conclusions

- In women at average risk for osteoporosis with an initial BMD T-score > -1.5, it appears safe to wait up to 15 years before rechecking the BMD.
- Women with greater degrees of osteopenia at baseline will need more frequent testing (5 years for moderate, 1 year for advanced).


BMD Testing Intervals Caveats

- The data was limited to women aged 67 and older (although within the study cohort, relatively younger women had a slower rate of BMD decline)
- BMD is only one factor in determining risk of fracture. Treatment decisions should be based on overall risk assessment (e.g. FRAX). Women at higher risk (e.g. steroid use) will need more frequent testing.


BMD Testing Intervals Clinical Implications

- In most women who are at average risk of osteoporosis, the decision of when to retest the BMD may be based upon the initial BMD result.
- Longer intervals may be appropriate for many of these women.


Questions

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