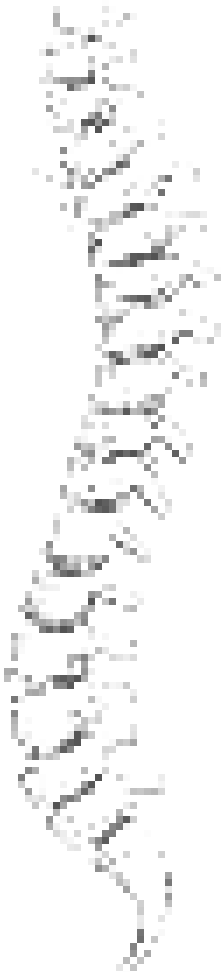


Osteoporosis in Middle East

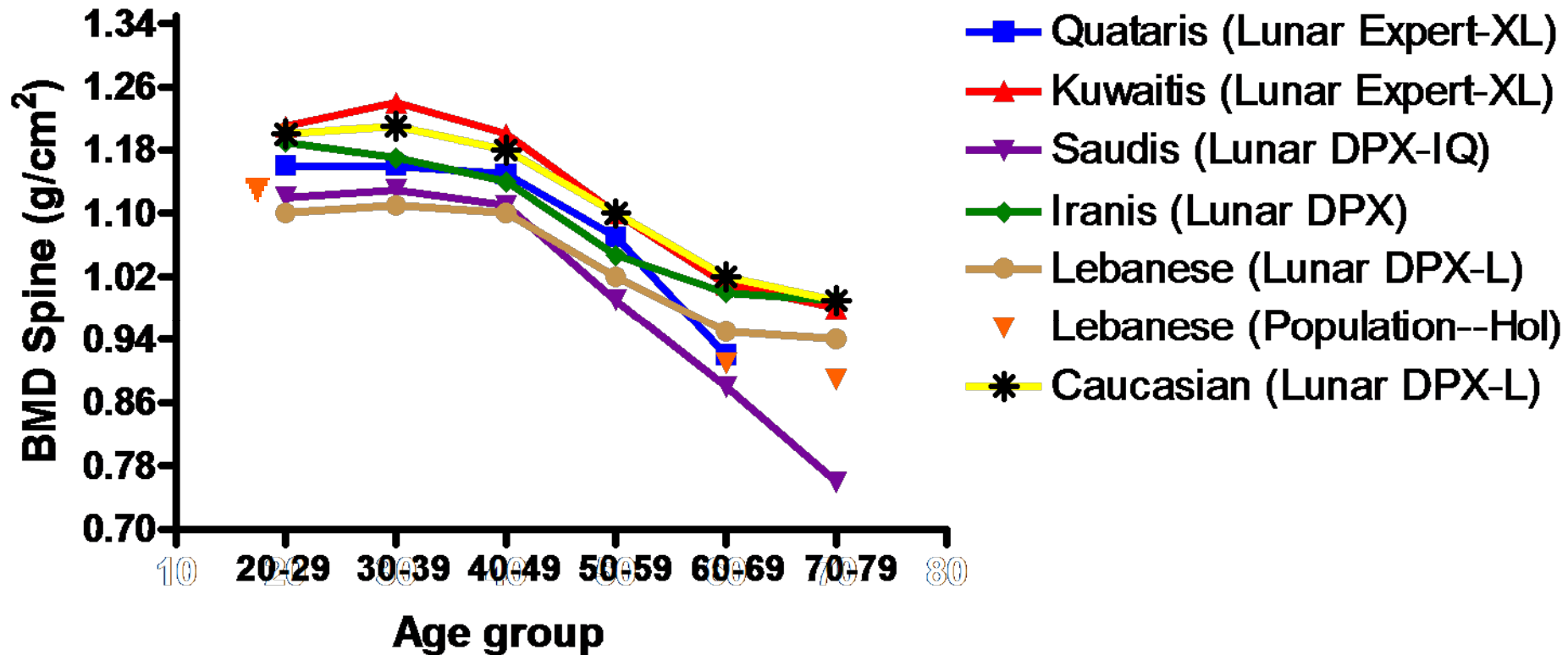
Ghada El-Hajj Fuleihan, MD, MPH.

Outline

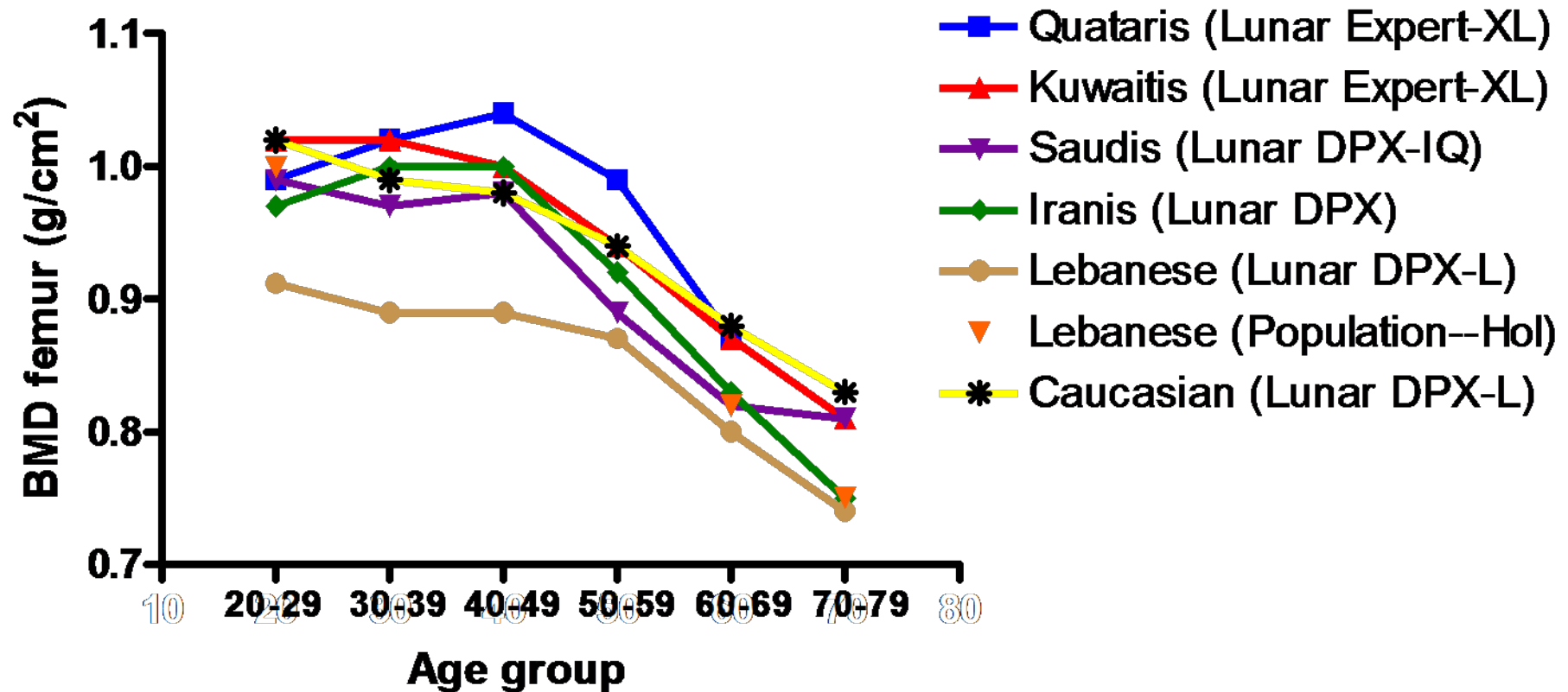
- BMD in ME
- Applicability of WHO criterion in ME: database selection
 - ROC curves
 - Fracture risk RR/SD decrease
- Prevalence of OP in ME by:
 - BMD data
 - Fracture data
- BMD in fracture subjects in ME, compare to western data
- Diagnosis and treatment of OP in ME



Mean BMD at the spine in females from ME



Mean BMD at the HIP in females from ME



Maturitas 2005; 52:319
Ol 2005; 16:43-

CTI 2001; 68:225
Ol 2000; 11:756

Bone 2002; 31:520- *JCD* 2006; 9:367-
Bone 2007; 40: 1066-

Fracture risk Assessment: Local vs International Reference Database

	Women, N=301		Men, N=159	
	Western	Local	Western	Local
Sensitivity	52	27	38	11
Specificity	71	89	79	99
PPV	30	35	20	66
NPV	86	83	90	89
ROC	0.65	0.57	0.64	0.57

BMD-fracture relationship

Age-Adjusted OR for VFX per SD ↘ BMD*

Lebanese Women compared to western standards

Site	Lebanese ¹		Western ²	Western ³
	<i>Local</i>	<i>Western</i>		
LS	1.16 ^{ns}	0.99 ^{ns}	2.3	1.36
Hip	1.49	1.61	1.8	1.66
FA	1.47	1.58	1.7	-

*T-score used, NHANES (hip) or manufacturer database (FA, spine)

¹ Baddoura, .. El-Hajj Fuleihan. Bone 2007;40:1066

²Marshall et al. B Med J 1996. (90 000 women) ³ Cauley et al. OI 2004 (2067 women)

RR of Hip Fx /SD decrease in hip BMD

<u>Risk assessment</u>	<u>N</u>	<u>RR</u>	
<u>Per SD decrease in Hip BMD</u>		<u>Crude</u>	<u>Adjusted</u>
Marshall BMJ 1996		2.6 [2-3.5]	
AUB (in preparation)	60	2.5 [1.5-4.3]	
Greenspan	56	1.7 [1.2-2.4]	
Epidos (OI 1998)	154	2.0 [1.7-2.5]	1.9
Alonso (OI 2000)	295	4.5 [3.1-6.4]	

Prevalence of OP by BMD at Total Hip Lebanese & Swedish women*

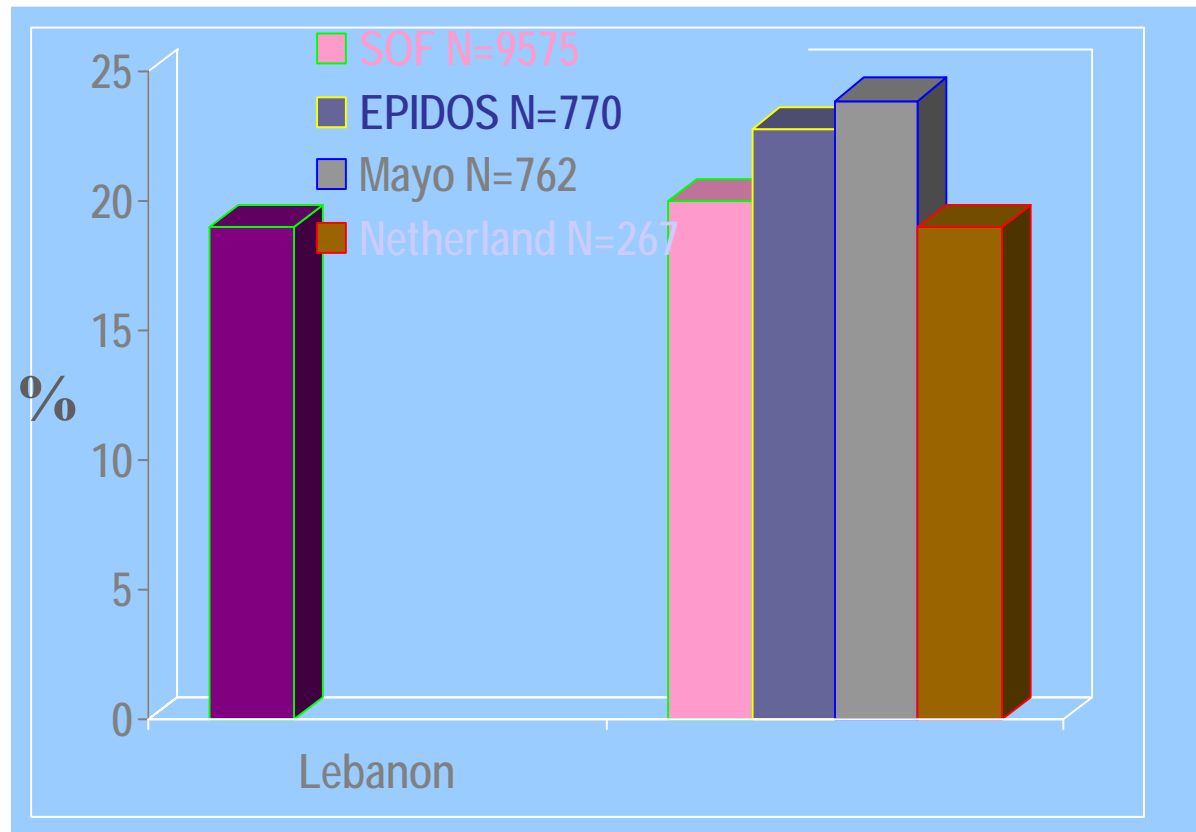
Age	Lebanese ¹	Swedish ²
65-69 yrs	23%	20%
70-74 yrs	27%	27.9%
75-79 yrs	34%	37.5%
80-85 yrs	60%	47.2%

*Western NHANES database used for both Lebanese and Swedish groups

¹Baddoura, .. El-Hajj Fuleihan. Bone 2007; ²Kanis et al. Osteoporos Int 2005;16:581

Prevalence of VFX by X-ray in Women

	<u>AUB</u>	<u>Netherlands</u>	<u>Mayo</u>	<u>SOF</u>	<u>EPIDOS</u>
Age	73(6)			72(5)	80(3)
Range	65-85	≥65	65-85	>65	



BMD in Lebanese women with VFX and comparison to SOF* population

Site	Lebanese¹	SOF²	P**
	N=56	N=386	
Age	75 ±4	75±5	NS
Height	148.1 ±6.7	156.9 ±6.0	0.001
Spine	0.74 ±0.13	0.78 ±0.16	0.07
TH	0.67±0.13	0.69 ±0.12	0.2
FN	0.57 ±0.08	0.60 ±0.09	0.01

¹Baddoura, .. El-Hajj Fuleihan Bone 2007;

²Cauley et al, Osteoporos Int, 2004 (age adjusted BMD values)

OP in Lebanon and ... Middle East

- Peak BMD is the same or a bit lower than that of Western countries by 0.3- 0.6SD (Bone size, vitamin D, ..)
 - BMD seems to be lower across all age groups
 - Vertebral Fx prevalence >65 yrs similar to US/Europe
 - Hip Fracture incidence close to Southern Europe: age younger, mortality higher, care gap
 - BMD/FX relation is the same as western standards
 - Use Western database for fracture risk assessment is superior to use of local databases in older individuals (WHO model, Lebanese Guidelines 2002, Lebanese Guidelines 2007)
-

Osteoporosis management in ME

The Challenges

- Require rigorous quality assurance protocols
 - Use a universal standard BMD database
 - Obtain data on incident fractures
 - Obtain additional data locally and regionally to validate use of WHO global fracture risk assessment model
 - Assess burden of disease: morbidity and mortality
 - Vitamin D supplementation
 - Care Gap and financial constraints
 - Further develop and disseminate OP guidelines
-

Lebanese Guidelines for Osteoporosis Assessment and Treatment : First Update

Endorsed by

Lebanese Society of Endocrinology

Lebanese Society of Obstetrics and Gynecology

Lebanese Association of Orthopedics

Lebanese Society of Radiology

Lebanese Society of Rheumatology

WHO Eastern Mediterranean Region

LMJ 2002; volume 50(3)

LMJ 2007;

International Journal of Clinical Densitometry 2005



OSTEOS

Lebanese Society for
Osteoporosis &
Metabolic Bone Disorders

IOF website link <http://www.osteofound.org/health>