



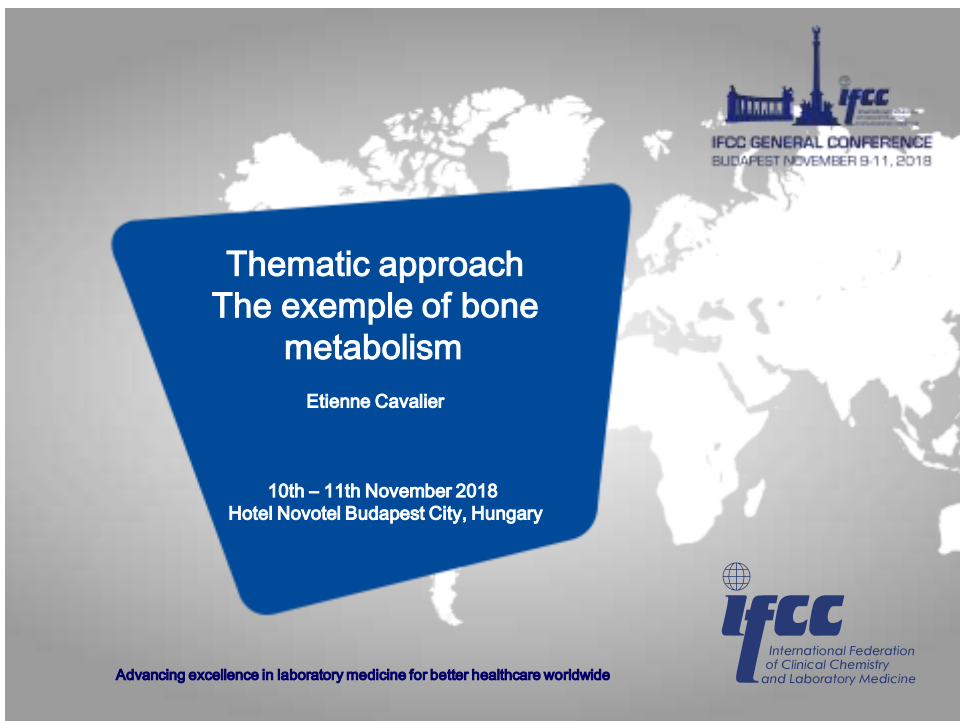
IFCC General Conference 2018

**Laboratory medicine:
Preparing for the 2020's**

10th – 11th November 2018
Hotel Novotel Budapest City, Hungary

Advancing excellence in laboratory medicine for better healthcare worldwide

IFCC
International Federation
of Clinical Chemistry
and Laboratory Medicine



IFCC General Conference 2018

**Thematic approach
The exemple of bone
metabolism**

Etienne Cavalier

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What is the actual situation?

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3 Working groups:
 WG for standardization of PTH
 WG on standardization of vitamin D metabolites
 WG on standardization of Bone markers

3 different stades of evolution!

PTH: No reference method yet, but a WHO standard
 VTD: Reference methods, NIST standards, VDSP certification
 Bone markers: no reference method, no standard (and no good QCE)



Rationale

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ENDOCRINOLOGY
 NEPHROLOGY
 OSTEOPOROSIS



Rationale

3

ENDOCRINOLOGY

Primary and secondary hyperparathyroidism: PTH, 25(OH)D

Establishment of good reference values for PTH: need 25(OH)D determination!

Other parathyroid diseases

Genetic idiopathic infantile hypercalcemia: 24,25(OH)₂ 25(OH)D PTH

A PTH result cannot be interpreted without calcium and vitamin D



Rationale

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NEPHROLOGY

KDIGO guidelines: PTH, 25-OHD and Bone alkaline phosphatase



Rationale

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OSTEOPOROSIS

Looking for secondary causes of osteoporosis:
PTH, 25(OH)D

Monitoring the compliance to treatment
PTH, 25(OH)D, CTX, PINP



Challenges

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WG on PTH

Different PTH forms and fragments
Non-oxdized PTH?
Lost of standardization in CKD patients?

WG on vitamin D

Impact of diseases, physiological status and ethnicity on standardization?
(CKD, pregnancy, DBP polymorphisms)
25(OH)D₂ (different crossreactivities,...)
Which limits to be used to consider that a method is standardized
Poorly standardized ELISAs (emerging countries)

WG on bone markers

Harmonization of CTX not yet possible
Easier for PINP
bALP
New markers! Sclerostin, FGF23,...



Emerging countries

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Difficult to have a PTH determination in many African countries

Reference ranges adapted???

Polymorphism of DBP

Prices of the reagents compared to local incomes



Conclusions

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Standardization of PTH, vitamin D and bone markers is far from being achieved.

Even with the most advanced WG, many questions remain and full standardization is not achieved yet.

Importance of the partnership with Manufacturers

Joining the efforts of the 3 WG into a Committee has a lot of sense since these analyses are often requested together.



Conclusions

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Standardization of PTH, vitamin D and bone markers is far from being achieved.

Even with the most advanced WG, many questions remain and full standardization is not achieved yet.

Manufacturers need to play the game

Joining the efforts of the 3 WG into a Committee has a lot of sense since these analyses are often requested together.

Constitution of a new IFCC Committee on standardization of PTH, vitamin D and bone markers, with a call for candidates from national societies.



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Current terms of reference

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Evaluate commutability of PTH IS 95/646 and encourage its worldwide implementation

Constitution of an appropriate panel of sera and plasma to establish reference intervals

Development of a reference measurement procedure for PTH(1-84)

Standardize or harmonize two bone turnover markers: CTX and PINP.

Re-evaluate current VDSP performance guidelines for 25(OH)D

Establish VDSP performance guidelines 24,25(OH)2D

Standardization of 25(OH)D2 and in patients

Biological variation of 25(OH)D and 24,25(OH)2D

New markers: FGF23, TRAP-5b, bALP, sclerostin...



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