

Diabetes in the Elderly

[more ain't better !]

Ricardo Ortega MD, LLC
Board Certified in Family Practice
Board Certified in Hospice & Palliative Medicine
Medical Director - Hospice de La Luz

? who are “The Elderly” ?

by 2020 ~ 54.6 million over 65 years old,
(now ~42 million) and . . .

7.3 million over 85 yo (now ~ 5.5 m) !

DM prevalence in 2020

~ 10% over 65 = 5.5 million

~ 15% over 85 w have DM = 1.1 million !!

a tale of 2 patients, Mr A & Mr B

Both pt A & B are 80 yo, both have CHF, HTN, Cholesterol, A fib, BPH, DM type 2

pt A resides in AL, MMSE 10/30, assist w ADLs, BMI 15, Hx behavior dyscontrol & falls

pt B independent in home w wife, retired professor working on book & articles, MMSE 30/30, BMI 23, on boards - including Alzheimers Association

a tale of 2 patients

? should we use the same treatment goals, screening protocols for both A & B ? ?

Clinical trials generate guidelines, treatment goals . . . however :

- in the past tended to eliminate those w multiple co-morbidities, seldom include any over 80 yo, still often exclude those w dementia
- a prime example is the landmark UKPDS (UK Prospective Diabetic Study in late 1970s) which excluded all over 65 yo
- the ACCORD trial (Action to Control Cardiovascular Risk in Diabetes, 2008) had an upper age limit of 79 yo – the trial was stopped d/t increased events in the study group (intensive Rx) c/w control group (usual Rx)

a tale of 2 patients

what are the differences between Mr A & Mr B ?

Mr A has obvious frailty syndrome, B certainly doesn't . . . ? WHY ?

their ages & Dx lists don't tell us . . . Genetics ! History ! Duration of Rx !

both Mr A & B have had DM & HTN for 30 yrs, but Mr A agreed to Rx later,
initially less attentive to his Rx

Mr A therefore has had more years to develop combined VASCULOPATHY

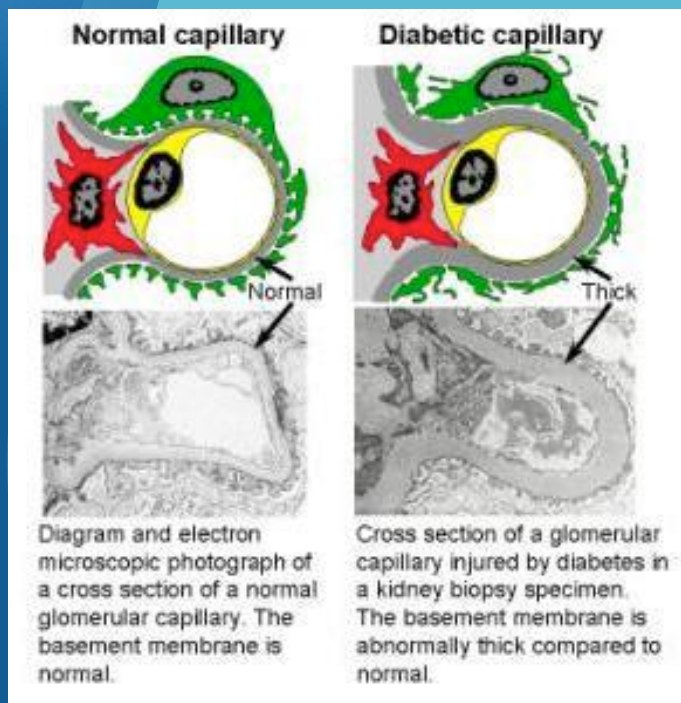
VASCULOPATHY

final common pathway in DM, HTN,
many others

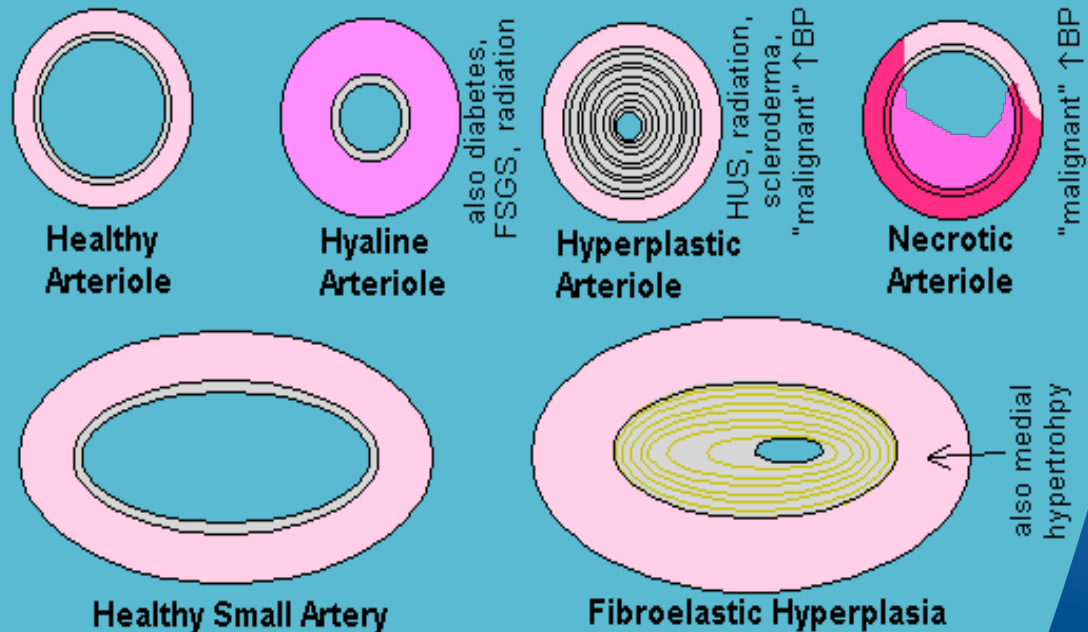
Basement membrane is a thin layer of **matrix** separating parenchymal cells from connective tissue. It's ultrastructure consists of a three-dimensional network of irregular, fuzzy strands referred to as "cords"; cord thickness averages 3–4 nm . . . the cords are composed of at least five substances: collagen IV, laminin, heparan sulfate proteoglycan, entactin, and fibronectin.

in plain language, the basement membrane is the gel matrix around the one cell thick capillary wall which allows bi-directional diffusion of Oxygen, Glucose, CO₂, other key substances, depending on the programming of the capillary wall cells, as well as the cells of the involved organ . . . brain, lung, muscle, intestine, etc.

VASCULOPATHY = hardening of the arteries (especially capillaries) = ATHEROSCLEROSIS

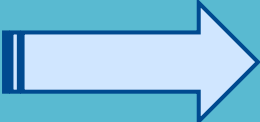


High Blood Pressure: The Microvascular Lesions



Vasculopathy in target organs

Kidney  Renal Failure: 1% of 5.5 m x \$80,000 = \$4.4 billion/yr

Heart  MI, CHF, Sudden Death \$ billions more

Brain  Dementias \$ billions more x more years !!

Vasculopathy

Would Mr A be improved if someone Fed-Ex'd him the ideal 2014 diet & DM guidelines ?

Probably not - several months of ideal care won't reverse decades of non-ideal care

Barriers ? poor access to meds, care

fear & denial

Diet & prior guidelines

lack of exercise

2013 guidelines for DM

GlycoHgb < 6.5 % if young, no CVD, low comorbidities

GlycoHgb ~ 8% unless advanced vasculopathy, multiple comorbidities

so, almost all of the elderly (except Mr B) are flying the ~ 8% flag

! Primum non nocere !

First - do no harm

DM in the elderly – Daly MD, UCSD Geriatric Med

? is tight (& **safe**) control beneficial in elderly ?


a meta-analysis of 33,000 pts from 5 RCTs:

- showed 17 % reduction in non-fatal MI,
- a 15% reduction in other CAD events (Lancet: v 373, issue 9677, 5/09)

BUT, no significant effect on all-cause mortality or CVA !

? WHY ?

! Primum non nocere !

? WHY ?  mild hypoglycemia in compromised brain (similar to mild hypoxia) leads to confusion, reduced balance, blunted communication (reduced signaling for liquid, food), increased falls, increased aspiration risk

THEN . . . add in effects of co-morbidities, meds (beta-blockers, psychotropics, sleep-aids, Clonidine, etc), esp Frailty syndrome (low wt, poor appetite, reduced alertness, reduced balance)

! Primum non nocere !

Association between Intensification of Metformin Rx w Insulin vs Sulfonylureas
(JAMA, 2014; 311, 2288-2296)

- 43,000 pts, 39,990 to Metformin + Sulfonylurea, 2948 Metformin + Insulin
- CV event rate: M+S = 7.8/1000
M+I = 10/1000
- All death rate: M+S = 10.6/1000
M+I = 17/1000
- Cancer D rate: M+S = 7/1000
M+I = 14.6/1000 (ass'n betw Insulin resistance & Ca)

! Primum non nocere ! HTN

VALISH study (none > 84 yo)

- lower risk of cerebrovascular events in 65 – 74 yo w reduction from > 150 systolic to < 140 systolic

! BUT !

- NO benefit to same reduction in 75 – 84 yo group
- Risks of BP over-Rx in elderly – orthostatic/falls, beta-blocker blahs, reduced cognition, reduced CV stamina, increased CerebroVascular risk d/t under perfusion of brain circulation - macro & micro

! Primum non nocere ! Lipids

PROSPER study – cholesterol lowering in elderly

- decrease in CV deaths
- no change in stroke deaths
- but higher side-effects w Pravastatin – asthenia, low appetite, wt loss

! Primum non nocere - GLOBAL !

Clinical Inertia & DM over-treatment (JAMA; 311, v 22, 2236 – 2237)

TIGHT CONTROL in anyone with reduced cognition &/or multiple co-morbidities not a good idea . . . or looking from the other direction: only a subset of young motivated diabetics can safely accomplish TIGHT CONTROL

The ACCORD Study, the VADT (VA Diabetes Trial), VALISH study, PROSPER study & ADVANCE trial (Action in Diabetes & Vascular Disease) all show either no benefit, or harm w intensive control

! Primum non nocere - GLOBAL !

my patients are safest w CBGs over 150, GlycoHgb < 8%

if unpredictable meals - long-acting Insulins & orals are potentially dangerous, except for Metformin

intensive dietary management is rarely practical, except for clones of Pt B

! Primum non nocere - GLOBAL !

Systolic 150 range, usually HCTZ 12.5 + _____, avoid higher beta-blocker doses unless recent vascular event, check orthostatic BP often

If on hi-dose statins, consider indication for hi-dose in context of 3X risk of myopathy but minimal improvement in CV event rate - c/w usual dose statins (NEJM 2011; 365, 285-287) . . . also, hassle factor of serial lab monitoring

If any report of anorexia, GI upset &/or med refusal, then statins are 1st in line for hold . . . DC if improval off statins

! Primum non nocere - GLOBAL !

a cautionary tale: Pt A w unrecognized skipped meals, Lantus still given . . .

delirium from hypoglycemia thought to be purely behavioral, not metabolic . . .

PRN Lorazepam given, in a few min pt breaks forearm w increased delirium . . .

while in-pt post-op CBGs in good range, but intense post anesthesia delirium,
and gets a dermal shear injury while struggling . . .

Cellulitis in skin injury, gets IV atbx, then C Dif, then

Primum non nocere

Diabetes and other vasculopathic conditions are manageable in the Elderly, with treatment guidelines appropriate to age & functional status

We use our training, our in-the-moment skills, and we hope for **GOOD LUCK** for all of our patients

Thank you for your attention