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Incretin Hormone Glucagon-Like Peptide-1 is increased in patients with acute phase ST Elevation Myocardial Infarction treated with primary PCI

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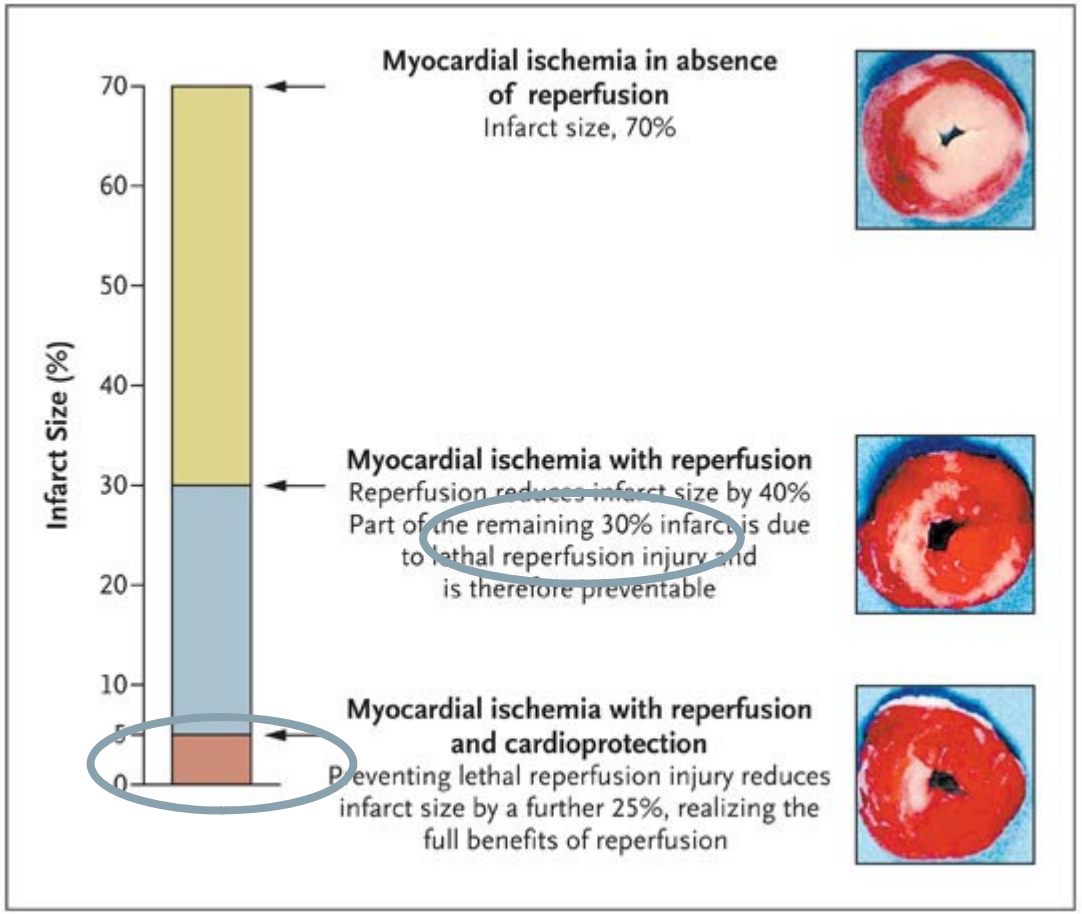
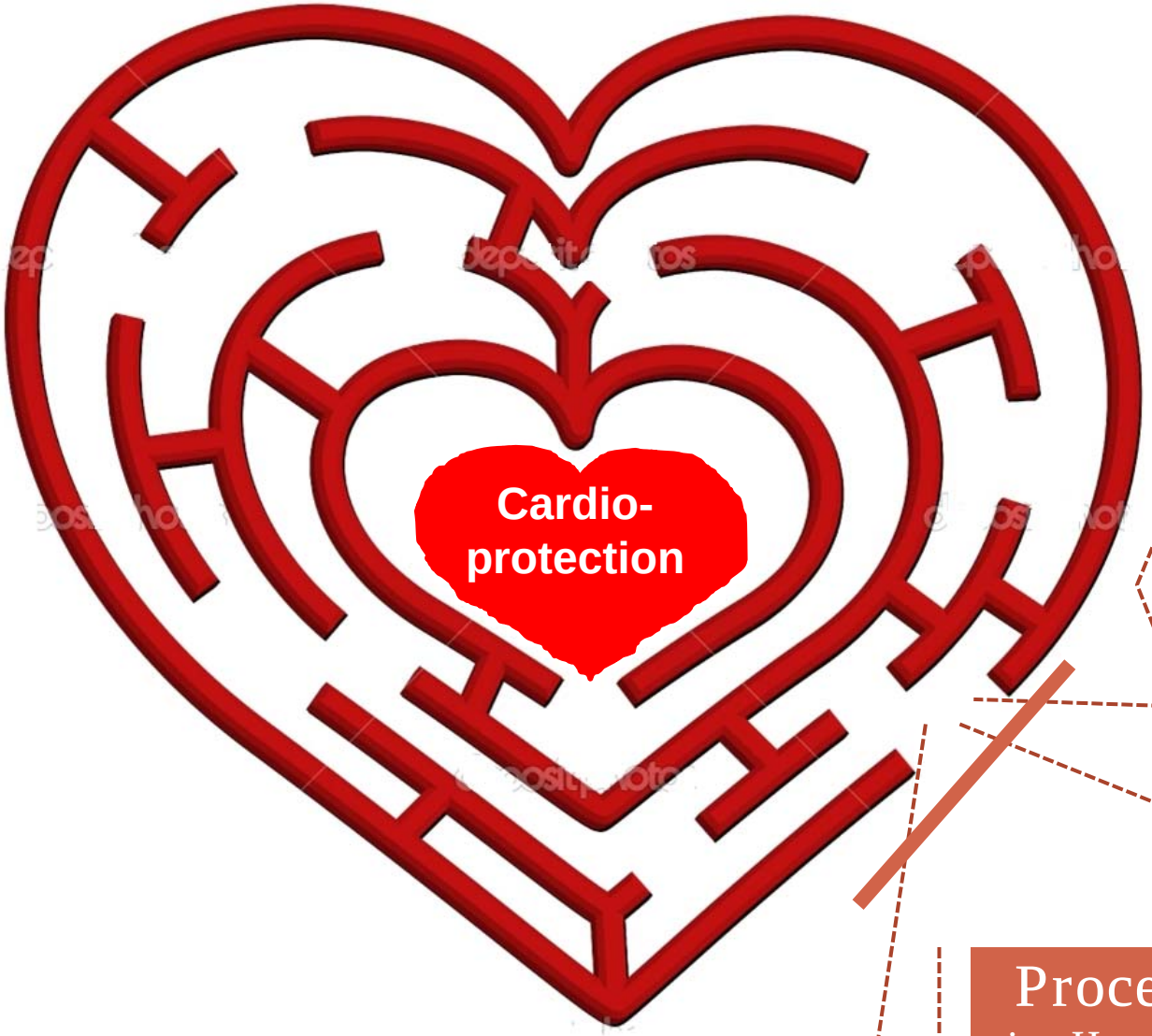
- No disclosure to declare

Background I

Contribution of Lethal Reperfusion Injury to Final MI Size



Yellon and Hausenloy, ***NEJM*** Sep.2007,

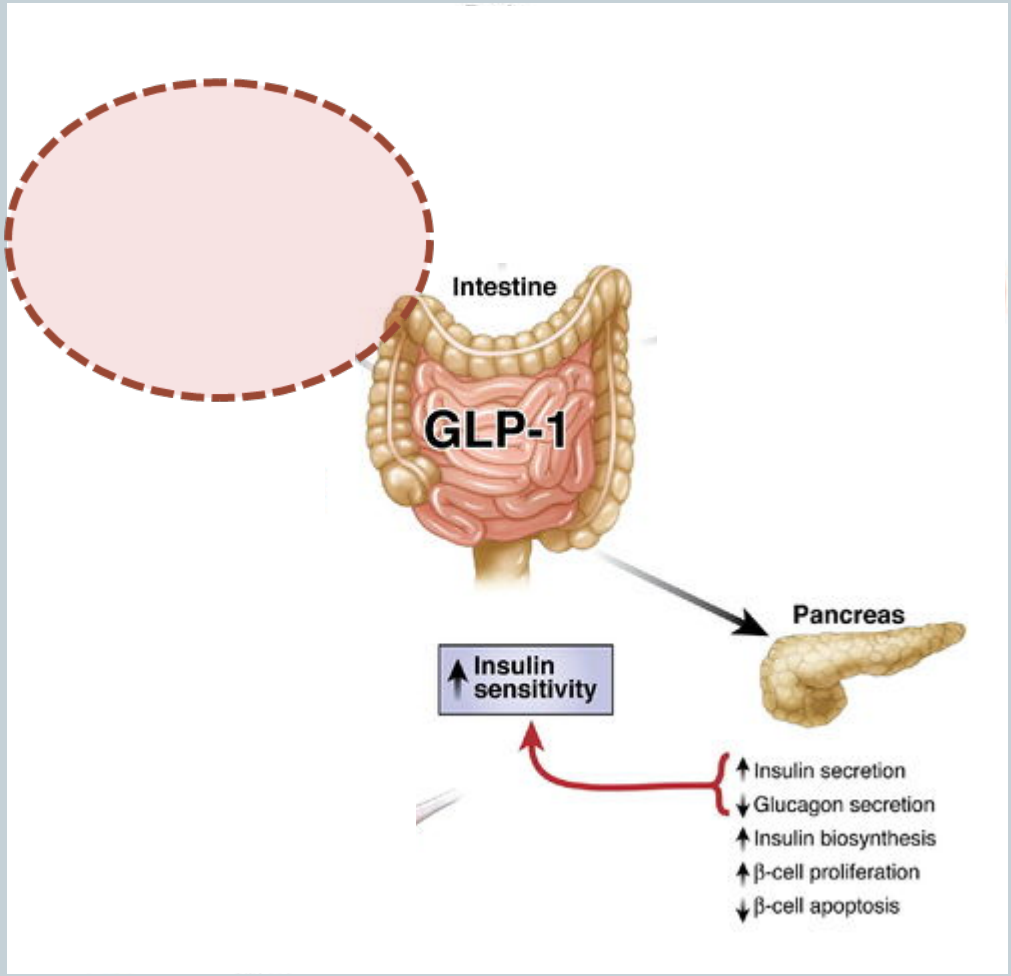


Physiol. pathways
i.e. pre & postconditioning

Drugs
i.e. Nicorandil, cyclosporine

Procedures
i.e. Hypothermia, Cell Tx

Background II
Glucagon like peptide 1 (GLP-1)



✓Release to a variety of stimulus (not only meals)

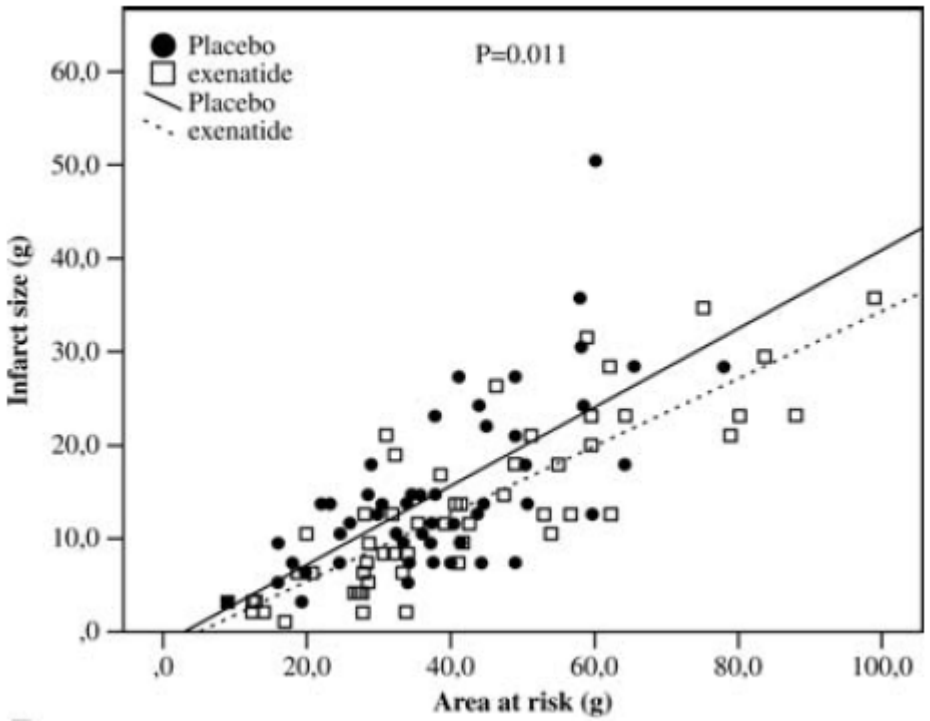
✓Originate not only from the intestinal L-cells

✓Potent insulinotropic hormone

European Heart Journal (2012) **33**, 1491–1499
doi:10.1093/eurheartj/ehr309

CLINICAL RESEARCH
Acute coronary syndromes

Exenatide reduces reperfusion injury in patients with ST-segment elevation myocardial infarction



EHJ Lønborg et al. 2012, 1499–1491 ,33

Study Aim

- Determine GLP-1 levels in patients presenting with ST segment elevation myocardial infarction in the acute phase and recovery time

Methods

Prospective, observational, single-center study

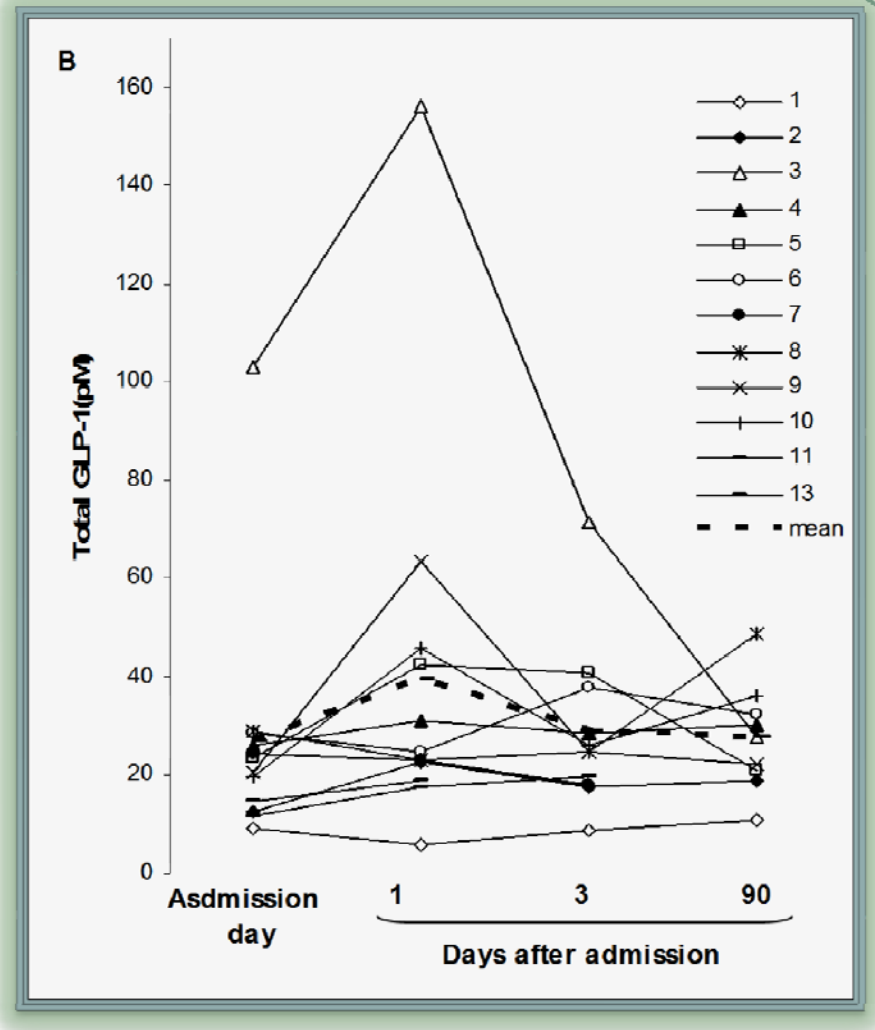
Results:
Patients Characteristics

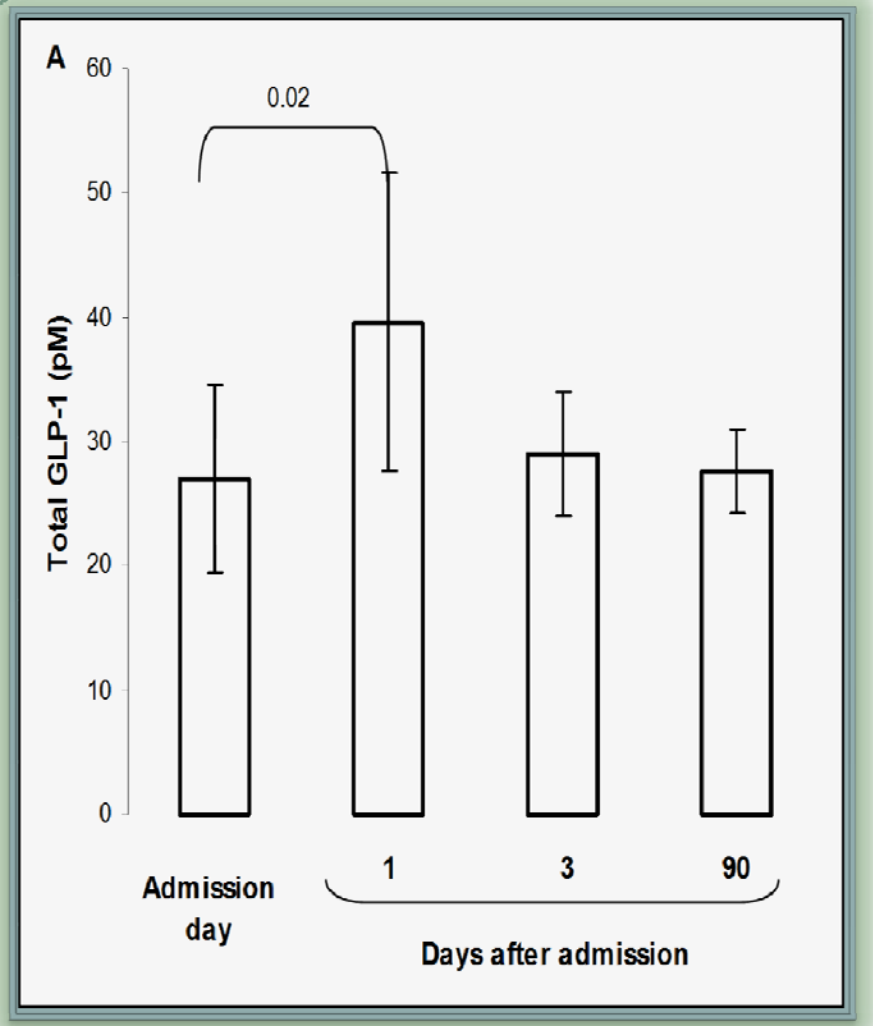
Patient n	1	2	3	4	5	6	7	8	9	10	11	12
Age	58	66	55	59	65	44	53	60	55	82	56	90
Diabetes Mellitus	0	0	0	0	0	0	0	1	0	0	1	0
Hypertension	1	1	0	0	1	0	0	0	0	1	1	1
Hyperlipidemia	1	0	1	1	0	1	1	1	0	1	1	1
Current smoker	0	0	0	0	0	1	1		0	0	1	0
Former smoker	1	1	0	0	0	0	0		0	0		0
TIMI score	1	1	8	2	1	1	0	1	2	4	3	6
Shock	0	0	1	0	0	0	0	0	0	0	0	1
CK base	44	96	146	436	2640	NA	282	NA	141	153	78	650
CK 24 hs	193	566	3349	1200	4725	1301	772	570	1944	798	1613	4163
Median 3days CPK	316	531	3269	635	2691	875	705	332	1775	467	381	3880
EF% 1 day	50%	50	35	50	40	45	55	40	40	45	45	30%

Levels of total GLP-1 in plasma

	Admission	24 hours	72 hours	90 days
Patient 1	9.4	5.8	8.8	10.8
Patient 2	12.8	22.6	17.6	19.0
Patient 3	103.3	156.2	71.5	27.6
Patient 4	26.2	31.0	28.7	30.1
Patient 5	23.5	42.4	40.8	21.2
Patient 6	28.7	24.6	38.0	32.6
Patient 7	24.4	23.0	18.0	NA
Patient 8	29.0	23.0	24.9	48.7
Patient 9	20.5	63.7	24.9	22.1
Patient 10	19.9	46.0	26.2	36.0
Patient 11	14.9	19.0	NA	NA
Patient 12	11.7	17.6	19.9	NA
mean	**27.0**	**39.6**	**29.0**	**27.6**
SD	**24.92**	**39.79**	**16.76**	**11.04**
SE	**7.51**	**12.00**	**5.05**	**3.33**
p (a vs b)		**0.02**		

Levels of total GLP-1 in plasma





Discussion

- Possible role of GLP-1 in cardio-protection?
- Represents a non-specific acute phase response to tissue injury ?
- GLP-1 response have a prognostic value ?

Conclusion

- We demonstrates for the first time that GLP-1 levels increase in patients with acute STEMI. This novel finding supports a possible role for GLP-1 in the physiologic response to acute cardiac ischemia while its clinical and prognostic significance await further studies

Thank you !