18th CONGRESS OF INTERNATIONAL FEDERATION OF ASSOCIATIONS OF ANATOMISTS (IFAA)

30th CONGRESS OF CHINESE SOCIETY OF ANATOMICAL SCIENCES (CSAS)

Anatomy,
from gross to molecular and digital

18th IFAA
30th CSAS

August 8-10, 2014,
Beijing International Convention Center(BICC) China

PROGRAM

会议日程

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THE 18th CONGRESS OF THE INTERNATIONAL FEDERATION OF THE 30th CONGRESS OF CHINESE SOCIETY OF ANATOMICAL SCIENCES

BEIJING CHINA 08-10 AUGUST

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PROGRAM

	 Tianzi Jiang		**Olaf Sporns,** *Provost Professor in the Department of Psychological and Brain Sciences, Indiana University, USA.* **Title: Mapping the complex networks of the human brain**
			**FuqiangXu,** *Professor of Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences.* **Title: Visualizing the neurocircuits**
August 10, 2014 **(Sun.)** **10:30 - 12:30** **Room 307**	Parallel Symposium 24 - Horizons in Development **Sponsor Anatomical Society.** Chair:  Colin Ockleford		**Colin Ockleford** *F.R.C.Path., D.Sc., Lancaster Medical School, Lancaster University, Lancaster LA1 4YB. UK.* **Title:Horizons in Development**
			**Liu Yi-Xun** *Professor, Academician of Chinese Academy of Sciences (CAS), Chairman of Academic Committee of State Key Lab of Reproductive Biology, Director of Chinese Society of Reproductive Biology.* **Title: Regulation of spermatogonial stem cells development and spermatogenesis by somatic signaling**
			**Anne Ferguson-Smith,** *Professor and Head of the Department of Genetics, Cambridge University, UK.* **Title: The epigenetic paradigm shift in reproductive and developmental anatomy**
			**Zoltán Molnár** *Professor of Developmental Neurobiology, Department of Physiology Anatomy and Genetics, Oxford University, UK.* **Title:Development of the Central Nervous System**
			**Antonio Hernández Jerez** *Professor of Toxicology, University of Granada School of Medicine, Spain.* **Title:Anatomical influences in regulatory approaches to developmental neurotoxicity**
August 10, 2014 **(Sun.)** **10:30 – 12:30** **Room 308**	Free Papers Session 7-Histology Chair: He Li 李和 (China) Mahajan,Reeha (India)	1.Darwin,Eryati(Indosia) : The Histopathologic appearance of the pancreatic islet in hyperglicaemia. 2.Zhen Li (China): Localization and involvement of RANTES in regulating luminal acidication in rat epididymis. 3.Adamkov,Marian(Slovakia): Expression of mismatch repair proteins and correlation with survivin in colon lesions. 4.Jun Tan(China): Role of C-KIT receptor in the development of colorectal cancer. 5.Mahajan,Reeha(India): Chronic Toxicity induced by Chlorpyrifos- A Histomorphological Study. 6.Khazaeil,kaveh(Iran): Immunohistochemistrical and molecular changes in lamb articular cartilage induced by enrofloxacin. 7.Chirculescu,Andy R.M.(Romania) Immunocytochemical Peculiarities of the Human Foetal Pituitary Cells. 8.Mustafa F Sargon(Turkey) The Suspension bridge: A Novel approach for transmission electron microscopy (TEM) of myodural bridges.	
12:30 - 13:30	Lunch Break		

August 10, 2014 **(Sun.)** **13:30 - 15:30** **Room307**	Parallel Symposium 25- Permeability **Sponsor Tasly Microcirculation Research Center** Chair:  **Jingyan Han**		**Jingyan Han,** *Professor and Chair, Department of Integration of Chinese and Western Medicine, Peking University Health Science Center, Beijing, China. Vice-President of Chinese Society for Microcirculation.* **Title: In vivo analysis of microvascular permeability in normal and ischemia/reperfusion rats**
			Gu Yong, *Associate Professor and Lab Chief in Department of Neurology, Nanfang Hospital, Southern Medical University,China.* **Title: Nitrix oxide/Caveolin-1/MMP pathway: A Novel Therapeutic Strategy for Drug Discovery from Hebral Medicine Targeting BBB disruption during Cerebral Ischemia-reperfusion Injury**
			Masato Yasui, MD, PhD , *Professor and Chair, Department of Pharmacology Keio University School of Medicine, Tokyo Japan.* **Title: A novel method to measure epithelial water permeability using coherent anti-Stokes Raman scattering (CARS) microscopy**
			**Chun-Shui Pan.** *Tasly Microcirculation Research Center, Peking University Health Science Center. China.* **Title: Microvascular hyperpermeability induced by LPS and the amelioration of Chinese medcine**
			**Qiao-Bing Huang,** *Professor, Department of Pathophysiology, Key Lab for Shock and Microcirculation Research, Southern Medical University. China.* **Title: Advanced glycation end products induce endothelial dysfunction in the development of diabetic microvascular complication**
August 10, 2014 **(Sun.)** **13:30 – 15:30** **Room 305A-B**	Free Papers Session 8- Stem Cell Chair: Robet Chunhua Zhao 赵春华 (China) Getsios,Spiro (USA)		1.Getsios,Spiro(USA): An Eph/Ephrin-Desmoglein 1 signalizing nexus that regulates keratinocyte adhesion and differentiation. 2.Zhiying Zhang (China): Small Molecule Compounds Induced Differentiation of Mesenchymal Stem Cells into Neuronal Cells. 3.Nobakht,Maliheh(Iran): Effect of Neurotrophin-3 on differentiation of rat hair follicle stem cells into neural like cells. 4.Zhiyuan Li (China): Vitamin E isoform δ-tocopherol enhanced the efficiency of neural stem cell differentiation via L-type calcium channel. 5.Liem,IK(Indonesia): Flow Cytometry Analysis of Umbilical Cord Derived-Stem Cell Cultured in Various Xeno-free Media. 6.A,Carol(South Africa): The effect of a nanocrystalline silver dressing on epithelial restoration and the rate of healing in full thickness, excisional wounds in a porcine model. 7. Michela Isola(Italy) Morphological changes in human salivary glands in type 2 diabetic status.
August 10, 2014 **(Sun.)** **13:30 – 15:30** **Room305D-F**	Free Papers Session 9-Morphology Chair: Tuli,Anita (India) Maolin Tang 唐冒林 (China)		1.May,Hila(Switzerland): What femoral mid-shaft morphology tell us about early farmers at the advent of agriculture? 2.Yun Xiu (China): Loss of the myelinated fibers in the corpus callosum of the mouse model of schizophrenia induced by MK-801. 3.Farrell,Scott F(Australia): The anatomy and morphometry of the meniscoids of the lateral atlantoaxial joints. 4. Buliang Meng (China): Principle of relative positioning of structures in the human body. 5.Jetti,R(India): Ameliorative effect of ginkgo biloba on neurodegeneration caused by fluoride. 6.Uli,An ita(India): Vascular Endothelial Growth Factor as a Consequential Marker in Chronic Obstructive Pulmonary Disease. 7. Kippers,Vaughan(Australia) Adaptive Tutorials in Radiological Anatomy.
August 10, 2014 **(Sun.)** **13:30 – 15:30** **Room 308**	Free Papers Session 10- Asia Pacific Anatomical Associassion Chair: Yunqing Li 李云庆 (China) Raheja,Shashi (India)		1.Shuling Bai (China): Effect of curcumin on the expression of VEGF and Tsp-1 in aortic aneurysm. 2.Pawitan,Jeanne A.(Indonesia): Differentiation capacity of umbilical cord derived stem cells cultured in various kinds of media. 3.Chung,Beom Sun(South Korea): Portable document format files showing the surface models of cadavers. 4.Than,Myo(Malaysia): Are the nasal parameters and nose types of Malay population different from other races? 5.Meyer,Geoffrey T(Australia): Learn histology online! View innovative, learning and teaching resources for online delivery of curricula, laboratory practicals and formal assessments in histology. 6.Raheja,Shashi(India): Morphological and surgical anatomy of coronary sinus, its tributaries

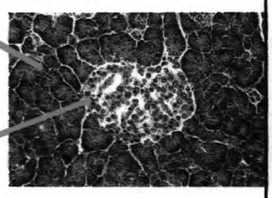
The Histopathologic Appearance of the Pancreatic Islet in Hyperglicaemia

Eryati Darwin and Muhammad Farid
Faculty of Medicine, Andalas University
Padang-Indonesia

INTRODUCTION

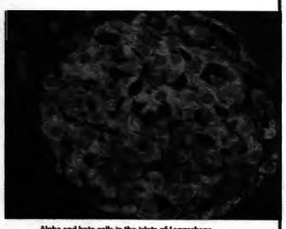
PANCREAS:

- **Exocrine**
  - **pancreatic acini**
  - **pancreatic enzyme**
- **Endocrine**
  - **islets of Langerhans**
  - **pancreatic hormones**
  - **glucosa homeostasis**



ISLETS OF LANGERHANS

- **Named for the German physician Paul Langerhans, 1869**
- **Unique architecture**
- **Cluster of cells in variying size**
- **1-3 million (1-2% volume)**
- **Few - many hundreds of cells**
- **Type of endocrine cells**
  1. **Principal cells:**
     α, β, δ
  2. **Minor cells:**
     PP, D1,EC,ε



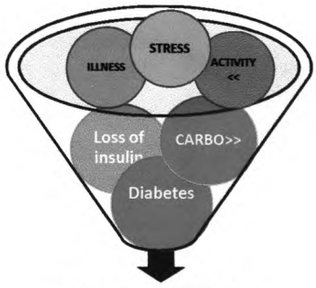
Alpha and beta cells in the islets of Langerhans.
Source: Masur

CELL TYPE IN PANCREATIC ISLET OF LANGERHANS

TYPE	%	M.A staining	SECRETION	GANULE	LOCATION	FUNCTION
A (α)	15-20	red	Glucagon	250nm	peripher	Incr.blood gluc
B (β)	60-70	brownish-orange	Insulin	300nm	central	Decr.blood gluc
D (δ)	5-10	blue	Somatostatin	325nm	peripher	Inh.insulin,glucagon secr.
PP(F)	3-5		Polypeptida			Inh.motility,panc r.enz
D1	minor		Vasoactive intest.peptide		acini,duct ep	Simi.glucagon, motility
EC	minor		Secretin,motilin,subst.P		acini,duct.ep	Stim.enz,inc.motility,neurotrans
ε	minor		Ghrelin		ep.lining gaster	Stim.appetite

Hyperglycemia

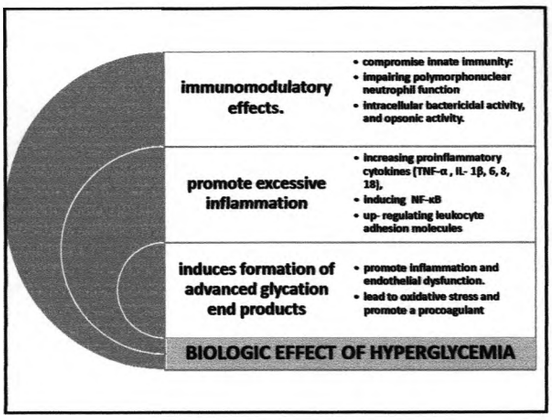
- **The term originated from Greek words**
  - **hyper : excessive**
  - **glyc : sweet**
  - **emia : blood.**
- **High blood sugar, characterized by the excessive amount of glucose in the blood plasma**
- **Medical condition that occurs among people diagnosed with diabetes**



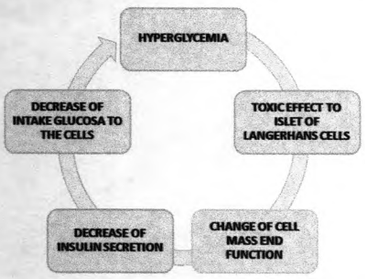
HYPERGLYCEMIA

DIABETES MELLITUS

- Prevalence:
  - world: 8,3%, 50% undiagnosed
  - 371 M people living with diabetes
- characterized by absolute or relative insulin deficiency leading to hyperglycemia and an altered metabolism of glucose, fat, and protein
- Complications
  - large vessel obstructions: coronary artery diseases
  - microvascular pathologies: retinopathy, neuropathy, and nephropathy.



Effect of hyperglicemia to the pancreas



MATERIAL AND METHODS

- 24 Swiss Albino mice
  - male
  - 2 months
  - 40-50 gr
- Devided into 4 groups:
  1. Control groups
  2. Hyperglycemia groups
     Treated with different doses of glucose for 14 days
     - G1 : 2g/kgBW
     - G2 : 4g/kgBW
     - G3 : 6g/kgBW
- Paraffin sections of pancreas stained with H&E

MATERIAL AND METHODS

Morphometric of the islet of Langerhans :

- density of the islets (the number of islets/mm2)
- the number of endocrine cells
- diameter of islets
- area of islets

RESULTS

Table 1: Density of the islet and the number endocrine cells on the islets of Langerhans in control and hyperglycemia groups

No	GROUPS n=6	DENSITY OF ISLET islets/mm²		ENDOCRIN CELLS	
		MEAN ± SD	p	MEAN ± SD	p
1	Control	1 ± 1	0,001	157,67 ± 22,83	0,001
2	G1	2 ± 2		156,17 ± 28,87	
3	G2	2 ± 0,63		210,33 ± 18,66	
4	G3	3 ± 0,52		264,17 ± 75,52[c]	

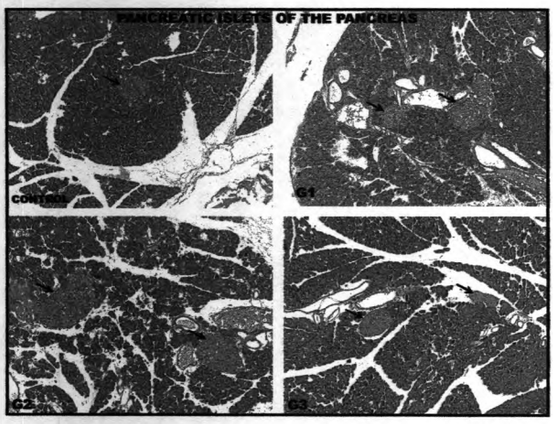


Table 2: Density of the islet and the number endocrine cells on the islets of Langerhans in control and hyperglycemia groups

No	GROUPS n=6	DENSITY OF ISLET islets/mm²		ENDOCRIN CELLS	
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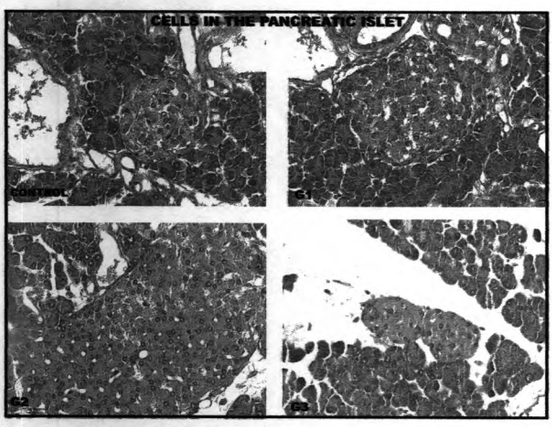


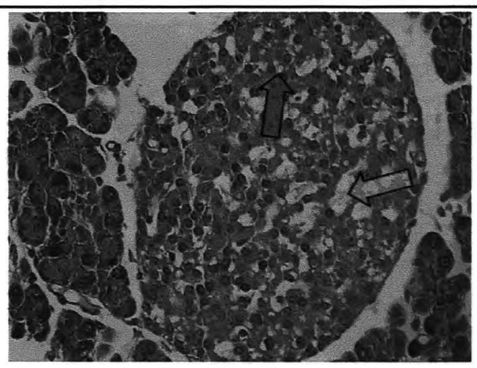
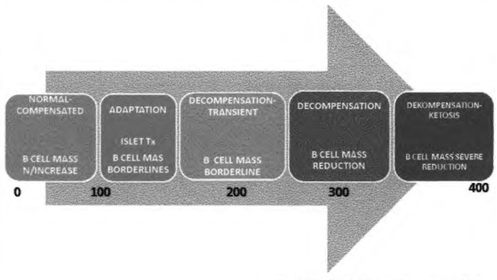


Figure 3: Vacuolisasi (red arrow) and apoptosis (green arrow) on G2

DISCUSSION

- Glucose is the dominant factor controlling β cell function and the maintenance of cell mass (control group)
- Changes in glucose levels seem to drive the major determinants of β cell mass (treated group)
- Chronic hyperglycemia can lead to β cell hyperplasia and hypertrophy (G1 and G2)
- Increases in glucose levels stimulate of β replication (G1,G2, and G3)
- Glucotoxicity, leads to an increased rate of β cell death (apoptosis or necrosis) (G2 and G3)

Stage of DM and β cell mass



Source: Gordon C. Weir and; Susan Bonner-Weir

CONCLUSION

1. **There are differences in diameter, area, density, and endocrine cell number of the islets of Langerhans between non-induced in compare to hyperglycemia-induced mice**
2. **Density of the islands of Langerhans were higher in hyperglycemia-induced mice**
3. **The diameter and area the islets of Langerhans were largest in hyperglycemia mice by low dose induced**
4. **Endocrin cells number were highest in hyperglicemia mice by high dose induced**

THANK YOU


The Histopathologic Appearance of the Pancreatic Islet in Hyperglicaemia
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AUGUST 8-10, 2014, BEIJING CHINA

CERTIFICATE

This certificate is presented to:

Name: **Darwin. E**

Title: **Prof. Dr**

As speaker in 18th IFAA Congress,
30th National Congress of CSAS

Prof. Bernard Moxham
The President of IFAA

Prof. Yunqing Li
The President of CSAS