WEEKLY EPIDEMIOLOGICAL REPORT

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Ministry of Health

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WEER SRI LANKA- 2013

Early metabolic abnormalities of NIDDM (Part II)

This is the second in a series of two articles on Early metabolic abnormalities of Non-Insulin Dependent Diabetes Mellitus (NIDDM)

Recommended interventions

The epidemic increase in diabetes and its serious long-term consequences strongly support efforts to prevent its occurrence, with the expectation that morbidity and mortality will be decreased. Even in the absence of direct data regarding the benefits of diabetes prevention on long-term complications, the Panel believes in principle that early intervention is justified based on the following: the goal of delaying the onset of diabetes and postponing its requirement for treatment, which is often complex; the prospect of preserving β-cell function; perhaps cardiovascular complications and the likelihood of microvascular diseases will be delayed or prevented.

Strong association between diabetes and obesity suggests that the first priority is maintenance of healthy weight and obesity prevention. All individuals who are overweight or obese, regardless of their blood glucose value, should be intensively counselled to lose weight and to exercise. In addition, interventions at the community level, such as changes in school-based meals and exercise programmes, community infrastructure changes conducive to increasing exercise frequency and legislation that promotes a healthy lifestyle are required.

As mentioned earlier, a number of clinical trials has demonstrated the value of lifestyle modification or pharmacological therapy to prevent or delay the onset of diabetes. These completed prevention trials indicate that an intensive lifestyle intervention provides the greatest reduction in the occurrence of diabetes, along with a modest reduction in CVD risk factors and has a favourable safety profile. Lifestyle modification studies were associated with virtually no serious untoward effects. In addition, lifestyle modification is likely to have other beneficial health-related effects.

For all of these reasons, lifestyle modification therapy emphasizing modest weight loss (5–10% of body wt) and moderate-intensity physical activity (~30 min daily) is the treatment of choice for individuals with IFG/IGT. While it is likely that the population enrolled in the clinical trials may not exactly mirror the general population, it seems very likely that lifestyle modification would benefit all people with IFG/IGT.

The more difficult issue is whether drug therapy is warranted to delay/prevent diabetes in individuals with IFG/IGT. Although several drugs successfully slowed progression to diabetes, there are many issues that need to be considered before medications can be recommended.

Metformin was the first drug shown to be effective. Although its effectiveness was about half that achieved with lifestyle modification (31 vs. 58%), substantially greater benefit was seen in a subset of younger and obese individuals. The drug is inexpensive and has a long history of use showing virtually no long-term serious side effects and only a low prevalence (5–10%) of modest side effects, such as nausea and gastrointestinal disturbances.

Acarbose appears to be as effective as metformin, but many patients cannot tolerate its gastrointestinal side effects and it is relatively costly. Orlistat is similar to acarbose in effectiveness and is also poorly tolerated, but because it is now an over-the-counter drug, it should be less costly. Of note, however, the study showing the effectiveness of orlistat was not designed as a prevention trial; therefore, the effect of the drug in diabetes prevention is not as clearly established as with the other drugs.

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Based on this synopsis of the available trial results, the Panel recommends that only metformin be considered as drug therapy for individuals with IFG/IGT. In the DPP, the subsets of the study cohort that had substantially increased benefit from metformin were those participants <60 years of age and those who had a BMI ≥35 kg/m². Therefore, the Panel also recommends that metformin be limited to such individuals. Since individuals with associated risk factors for diabetes, e.g., family history in first-degree relatives, elevated triglycerides, low HDL cholesterol and hypertension are more likely to progress to diabetes, the presence of one or more of these factors may contribute to the decision to treat with metformin. In addition, to better target a population likely to benefit from metformin therapy, an unpublished analysis of data from the DPP (see question 6) suggests that an A1C ≥6.0% approximately doubles the rate of progression to diabetes in an IFG/IGT population.

Screening for IFG/IGT

Screening for IFG/IGT is fundamentally no different from screening for diabetes. The same risk factors associated with diabetes are, not surprisingly, associated with IFG/IGT. Thus, the population to be screened for IFG/IGT should be the same as currently recommended for screening for diabetes. At present, FPG and 2h OGTT are the tests of choice to identify all states of hyperglycaemia. Either test is suitable, and each has advantages and disadvantages, such as convenience, cost, and reproducibility. Identification of individuals with IGT, which is recommended in order to institute metformin therapy, can be made only with a 2h OGTT, while identification of FPG requires measurement of the plasma glucose concentration after an overnight fast.

If only lifestyle modification is planned, a confirmatory test is not required. On the other hand, the Panel recommends that metformin therapy be considered in individuals similar to those included in the DPP with confirmed IFG and IGT who had the greatest benefit with metformin (see question 5) Therefore, both abnormalities (IFG and IGT) must be documented if metformin is to be used.

The most efficient sequence of testing is an FPG first (currently recommended as the preferred test to detect diabetes) followed by the 2 h OGTT on a subsequent day to demonstrate the presence of combined IFG/IGT. If individuals with IFG/IGT are treated with metformin, the Panel recommends that routine monitoring should be performed with A1C testing semi-annually. If not on drug therapy, the patient should be seen annually.

Source

Impaired Fasting Glucose and Impaired Glucose Tolerance-Implications for care-available from

http://care.diabetesjournals.org/content/30/3/753.full

Compiled by

Dr. Madhava Gunasekera of the Epidemiology Unit

Invasive Bacterial Disease surveillance in Sentinel Sites-1st quarter 2013

No. of suspected meningitis cases	30
No. of probable meningitis cases	9
Percentage (%) of CSF samples tested positive for organisms	0%
No. of children who met the pneumonia case definition	79
Percentage (%) of Pneumonia cases with positive blood cultures	0%
No. of sepsis cases	13
Percentage (%) of Sepsis cases with positive blood cultures	0%

Source-LRH, Epidemiology Unit

Rota virus surveillance in Sentinel Sites –1st quarter 2013

Number of acute diarrhoea hospitalizations in children <5 years	483
Number of stool specimen collected	113
Number of stool specimen tested positive for rotavirus	15
Percentage (%) of stool specimen tested positive for rotavirus	13 %

Source-MRI, Epidemiology Unit

Table 3 : Water Quality Surveillance
Number of microbiological water samples - March - 2013

District	MOH areas	No: Expected *	No: Received
Colombo	12	72	44
Gampaha	15	90	107
Kalutara	12	72	52
NHIS	2	12	22
Kandy	23	138	2
Matale	12	72	12
Nuwara Eliya	13	78	18
Galle	19	114	18
Matara	17	102	0
Hambantota	12	72	15
Jaffna	11	66	134
Kilinochchi	4	24	13
Manner	5	30	34
Vavuniya	4	24	39
Mullatvu	4	24	0
Batticaloa	14	84	26
Ampara	7	42	7
Trincomalee	11	66	0
Kurunegala	23	138	74
Puttalam	9	84	144
Anuradhapura	19	114	35
Polonnaruwa	7	42	0
Badulla	15	90	NR
Moneragala	11	66	90
Rathnapura	18	108	NR
Kegalle	11	66	54
Kalmunai	13	78	27

* No of samples expected (6 / MOH area / Month)
NR = Return not received

Table 1: Vaccine-preventable Diseases & AFP

13th – 19th April 2013 (16th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2013	Number of cases during same week in 2012	Total number of cases to date in 2013	Total number of cases to date in 2012	Difference between the number of cases to date in 2013 & 2012
	W	C	S	N	E	NW	NC	U	Sab					
Acute Flaccid Paralysis	00	00	00	00	00	01	01	00	00	02	01	21	26	- 19.2 %
Diphtheria	00	00	00	00	00	00	00	00	00	-	-	-	-	-
Measles	06	03	02	00	00	00	00	00	00	11	01	205	19	+ 978.9 %
Tetanus	00	01	00	00	00	00	00	00	00	01	01	07	04	+ 75.0 %
Whooping Cough	01	00	02	01	00	00	00	00	00	02	02	26	32	- 18.7 %
Tuberculosis	23	00	04	00	05	00	00	00	00	32	222	2539	2604	- 02.5 %

Table 2: Newly Introduced Notifiable Disease

13th – 19th April 2013 (16th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2013	Number of cases during same week in 2012	Total number of cases to date in 2013	Total number of cases to date in 2012	Difference between the number of cases to date in 2013 & 2012
	W	C	S	N	E	NW	NC	U	Sab					
Chickenpox	08	04	11	08	01	12	00	01	07	52	114	1400	1820	- 23.0 %
Meningitis	01 CB=1	00	03 GL=1 HB=1 MT=1	03 KN=1 JF=2	00	02 KR=2	01 AP=1	01 BD=1	02 KG=2	13	05	342	215	+ 36.6 %
Mumps	02	03	01	05	00	04	00	00	03	18	142	513	1723	- 68.2 %
Leishmaniasis	00	00	06 MT=1 HB=5	01 KN=1	02 TR=2	00	00	00	00	09	17	360	223	+ 59.1 %

Key to Table 1 & 2

Provinces: **W**: Western, **C**: Central, **S**: Southern, **N**: North, **E**: East, **NC**: North Central, **NW**: North Western, **U**: Uva, **Sab**: Sabaragamuwa.

DPDHS Divisions: **CB**: Colombo, **GM**: Gampaha, **KL**: Kalutara, **KD**: Kandy, **ML**: Matale, **NE**: Nuwara Eliya, **GL**: Galle, **HB**: Hambantota, **MT**: Matara, **JF**: Jaffna, **KN**: Killinochchi, **MN**: Mannar, **VA**: Vavuniya, **MU**: Mullaitivu, **BT**: Batticaloa, **AM**: Ampara, **TR**: Trincomalee, **KM**: Kalmunai, **KR**: Kurunegala, **PU**: Puttalam, **AP**: Anuradhapura, **PO**: Polonnaruwa, **BD**: Badulla, **MO**: Moneragala, **RP**: Ratnapura, **KG**: Kegalle.

Data Sources:

Weekly Return of Communicable Diseases: Diphtheria, Measles, Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps.

Special Surveillance: Acute Flaccid Paralysis.

Leishmaniasis is notifiable only after the General Circular No: 02/102/2008 issued on 23 September 2008. .

Influenza Surveillance in Sentinel Hospitals - ILI & SARI

Month	Human						Animal		
	No Received	Infl A untyped	Infl B	A(H1N1)pdm09	A(H3N2)	RSV	Pooled samples	Serum Samples	Positives
March	454	6	58	16	8	4	364	496	0

Source: Medical Research Institute & Veterinary Research Institute

Dengue Prevention and Control Health Messages

Check the roof gutters regularly for water collection where dengue mosquitoes could breed.

Table 4: Selected notifiable diseases reported by Medical Officers of Health

13th – 19th April 2013 (16th Week)

DPDHS Division	Dengue Fever / DHF*		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Returns Received
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	%
Colombo	59	2498	2	44	0	9	1	42	0	11	1	86	0	4	0	28	0	0	**62**
Gampaha	39	1152	3	42	0	7	0	13	0	10	4	109	0	6	2	78	0	0	**73**
Kalutara	23	550	1	50	0	8	1	29	0	7	3	164	0	1	0	5	0	0	**77**
Kandy	28	593	1	29	0	5	0	7	0	4	0	25	0	42	0	46	0	0	**70**
Matale	2	158	1	33	0	1	0	1	0	0	0	19	0	1	0	15	0	0	**62**
NuwaraEliya	1	76	2	27	0	2	0	2	0	2	0	8	5	32	1	4	0	0	**85**
Galle	5	232	0	30	0	8	0	1	0	4	1	95	0	20	1	5	0	1	**74**
Hambantota	8	124	0	18	0	2	0	5	0	9	5	109	0	31	0	53	0	0	**83**
Matara	8	201	1	19	1	8	1	7	0	5	1	84	1	30	2	82	0	1	**100**
Jaffna	27	343	1	67	0	4	10	170	0	7	0	0	21	268	0	8	0	0	**75**
Kilinochchi	1	19	2	12	0	0	0	5	0	1	2	9	0	10	0	0	0	0	**50**
Mannar	0	43	0	16	0	1	0	43	0	11	1	8	1	10	0	0	0	0	**40**
Vavuniya	1	32	0	19	0	9	0	4	0	4	0	29	1	2	0	0	0	1	**75**
Mullaitivu	6	50	0	3	0	1	0	3	0	2	1	10	0	4	0	0	0	2	**60**
Batticaloa	8	259	2	49	0	3	0	0	0	3	3	14	0	2	0	4	0	0	**57**
Ampara	0	48	1	36	0	0	0	1	0	0	1	7	0	0	0	1	0	0	**29**
Trincomalee	0	109	1	21	0	1	0	1	1	1	0	45	0	4	0	2	0	1	**42**
Kurunegala	26	1557	2	77	0	14	1	20	0	3	5	121	1	12	1	22	0	1	**88**
Puttalam	16	458	0	20	0	4	0	5	0	1	0	12	0	9	0	1	0	0	**67**
Anuradhapu	0	242	0	28	0	11	0	1	0	2	2	162	0	10	1	10	0	0	**5**
Polonnaruw	0	133	0	32	0	0	0	7	0	0	0	82	0	1	0	16	0	1	**0**
Badulla	6	153	3	41	1	1	0	5	0	1	0	15	0	24	0	17		0	**71**
Monaragala	5	95	1	32	0	3	0	6	0	18	18	115	0	19	0	30	0	0	**64**
Ratnapura	27	623	4	148	0	74	0	16	0	12	9	159	0	15	4	105	0	1	**89**
Kegalle	9	380	1	19	0	10	0	6	0	3	4	45	4	36	1	89	0	0	**91**
Kalmune	5	398	1	31	0	1	0	2	0	17	0	4	0	2	0	4	0	0	**46**
SRI LANKA	**310**	**10526**	**30**	**943**	**02**	**187**	**14**	**402**	**01**	**138**	**61**	**1536**	**34**	**597**	**13**	**625**	**00**	**09**	**66**

Source: Weekly Returns of Communicable Diseases WRCD).
***Dengue Fever / DHF** refers to Dengue Fever / Dengue Haemorrhagic Fever.
****Timely** refers to returns received on or before 19th April, 2013 Total number of reporting units 336. Number of reporting units data provided for the current week: 222
A = Cases reported during the current week. **B** = Cumulative cases for the year.

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Comments and contributions for publication in the WER Sri Lanka are welcome. However, the editor reserves the right to accept or reject items for publication. All correspondence should be mailed to The Editor, WER Sri Lanka, Epidemiological Unit, P.O. Box 1567, Colombo or sent by E-mail to **chepid@sltnet.lk.**

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