

## Journal Scan

### **The Diabetes Control and Complications Trial (DCCT)/ Epidemiology of Diabetes Interventions and Complications (EDIC ) Study Research Group. Mortality in Type 1 Diabetes in the DCCT/EDIC versus the General Population**

The DCCT was an interventional study initiated in 1983 , which divided 1441 type 1 diabetes mellitus patients randomly to receive intensive vs. conventional therapy with insulin. For the mean 6.5 years follow-up period of the study, the intensively treated arm achieved a glycated hemoglobin (HbA1c) level of approximately 7% , while the conventionally treated arm had a higher HbA1c of approximately 9%. Subsequently 1,394 of the original 1441 patients (97%) were followed in an observational study called by its acronym EDIC for a further 21 years. During this period of follow up, the mean HbA1c in both arms converged to approximately 8%.

During this entire period of follow up, all cause mortality was 320 per 100,000 patient years which was similar to that of the current U.S. Population (Standardised Mortality Ratio i.e. SMR = 1.09). However, the mortality in the conventionally treated group was higher than in the intensively treated group (376 vs 263 per 100,000 person years), yielding a relative mortality rate (RMR) of 1.49;  $p=0.028$ . Further, the mortality in the conventionally treated arm was higher than that in the general population (SMR= 1.31;  $p=0.018$ ) as well. The SMR rose by 74% for each 1% increase in the mean HbA1c. The increase in mortality per unit increase in mean HbA1c was greater in females as compared to males.

#### **Comment**

This is one of the largest intervention trials, followed by the longest post trial period of observation to document the mortality experience of patients with type 1 diabetes mellitus in relation to the general population. It conclusively shows that intensively treated patients fare better than conventionally treated patients in relation to all cause mortality, giving a further fillip to the importance of tight glycemic control, particularly so in women. However the treating physician has to balance the risks of hypoglycemia against the benefits of good glycemic control in individual patients.

*Diabetes Control and Complications Trial (DCCT)/Epidemiology of Diabetes Interventions and Complications (EDIC) Study Research Group. Mortality in Type 1 Diabetes in the DCCT/EDIC Versus the General Population. Diabetes Care 2016;39(8):1378-83. doi: 10.2337/dc15-2399.*

### **Long term Cognitive Implications in Adolescent Offspring of Women with Type 1 Diabetes (the EPICOM Study)**

This study evaluated the cognitive function of 277 children (aged 13-19 years) born to mothers with type 1 diabetes mellitus in comparison to that in 301 controls, by the Reynolds Intellectual Assessment Scales. Children of type 1 diabetes mothers had lower scores on composite intelligence (95.7 vs. 100,  $p=0.001$ ), verbal intelligence (96.2 vs. 100;  $p=0.004$ ), non-verbal intelligence ( 96.4 vs. 100 ;  $p=0.008$ ) and composite memory (95.7 vs. 100;  $p=0.001$ ). There were higher odds for parent reported learning difficulties in children born to diabetic mothers in primary school. However there were no



Online access

[http://svimstpt.ap.nic.in/jcsr/jan-mar17\\_files/js1.pdf](http://svimstpt.ap.nic.in/jcsr/jan-mar17_files/js1.pdf)

associations between HbA1c during pregnancy and subsequent cognitive function in diabetes exposed offspring.

### Comment

This study raises concern about the cognitive impact of maternal diabetes on the offspring. The information gleaned from this study needs to be discussed with diabetic mothers planning pregnancy, particularly if similar results are seen in more such studies. This may influence the reproductive plans of couples, where the mother suffers from diabetes- particularly type 1 DM. Fortunately the impact on cognitive scores though statistically significant, appears to be marginal, with the reduction in scores being of the order of around 5%. Whether a reduction of this magnitude would have an impact on the educational achievements and employability of these children as adults should now be studied.

*Bytoft B, Knorr S, Vlachova Z, Jensen RB, Mathiesen ER, Beck-Nielsen H, Gravholt CH, Jensen DM, Clausen TD, Mortensen EL, Damm P. Long-term cognitive implications of intrauterine hyperglycemia in adolescent offspring of women with type 1 diabetes (the EPICOM Study). Diabetes Care 2016;39(8):1356-63. doi: 10.2337/dc16-0168.*

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### Early versus delayed cholecystectomy for acute cholecystitis, are 72 hours still the rule? : A randomized trial.

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Currently it is routine practice to defer cholecystectomy to 6 weeks after the onset of acute cholecystitis in patients presenting more than 72 hours after onset of symptoms. However this guideline has very weak evidence base to support it. In the present study, authors randomised 86 patients presenting with acute cholecystitis beyond 72 hours after symptom onset to either early or delayed (> 6 weeks) cholecystectomy. Overall morbidity (14% vs. 39%), median total length of stay (4 vs. 7 days), duration of antibiotic therapy (2 vs. 10 days) and total hospital cost (9349 vs. 12,361 euros) were all lower in patients with early surgery as compared to delayed surgery, whereas the operative time (91 vs. 88 minutes) and post-operative complications (15% vs. 17%) were similar.

### Comment

This study puts a long established practice to the scrutiny of modern evidence based medicine and actually proves that such a practice might be counterproductive. Even patients presenting late after onset of acute cholecystitis may be subjected safely to immediate rather than interval cholecystectomy with the benefits of lower overall morbidity, shorter hospital stay and reduced cost. If confirmed, this important study has the potential to change surgical practice significantly.

*Roulin D, Saadi A, Di Mare L, Demartines N, Halkic N. Early versus delayed cholecystectomy for acute cholecystitis, are the 72 hours still the rule?: A randomized trial. Ann Surg. 2016;264(5):717-722.*

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### Health coaching and chronic obstructive pulmonary disease rehabilitation. A randomized trial

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In the long term management of COPD, a major issue is the need for repeated hospitalizations due to acute exacerbations. Authors designed an intervention to prevent some of these readmissions, which included; a written emergency plan for self-medication (prednisone 40 mg PO for 5 days plus either ciprofloxacin or doxycycline for 5 days) in the event of worsening symptoms, three simple upper extremity exercises, training on slow pursed lip breathing and a 20 min/day exercise on a Stamina In Motion Elliptical Trainer (Stamina Product, Springfield, MO). To test this intervention, the authors allocated 215 patients randomly to either receive the above intervention or

usual care. Over a one year follow-up period, re-hospitalizations were significantly reduced and the disease specific quality of life was seen to be improved.

### **Comment**

A simple intervention consisting of self- medication, physiotherapy training and patient coaching was found to improve quality of life and prevent hospital readmissions in COPD. This study highlights the role of interdisciplinary and educative approach in prevention of exacerbations. Involvement of patients in their own management in the home setting can successfully prevent hospitalizations and the attendant costs. There is a need for similar research in other chronic illnesses such as heart failure.

*Benzo R, Vickers K, Novotny PJ, Tucker S, Hoult J, Nuenfeldt P, Connett J, Lorig K, McEvoy C. Health coaching in chronic obstructive disease rehabilitation. A randomized trial. Am J Respir Crit Care Med.2016;194;672-8.*

### **Reviewers**

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