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OBJECTIVES

Extended up to 20 years follow-up of several randomized control trials showed 34 -43% diabetes risk reduction. Real life implementation studies performed worldwide in different settings and populations proved that also non-intensive, low budget lifestyle interventions can be effective. However little is known about long term results of the translational studies
 Therefore the objective was to study the risk factors changes of the DEPLAN non- intensive lifestyle intervention in primary health care setting during 3 year follow up.

METHODS

- The intervention in the DE-PLAN project (Diabetes in Europe: Prevention using Lifestyle, physical Activity and Nutritional intervention) based on the principles of the Diabetes Prevention Study (DPS) was developed as a real life implementation study in 17 countries in Europe
- Study participants (n=114) with baseline diabetes type 2 risk FINDRISC>14, no diabetes, received 10 group lifestyle counselling sessions, 6 motivation phones and 2 letters and physical activity. Measurements performed at 12 month after the initiation of the intervention were repeated after 36 month.

Table. Clinical outcome at baseline and at 1st year (n=175) and baseline and at 3rd year follow up (n=114) attached

| | baseline | | after 1 year | | change baseline to 1 year after | | baseline | | after 2 year | | change baseline to 3 years after | |
|---------------------------|----------|-------|--------------|-------|---------------------------------|-------|----------|--------|--------------|--------|----------------------------------|-------|
| | mean | SD | mean | SD | mean | SD | mean | SD | mean | SD | mean | SD |
| Men | 21,7% | | | | | | 9,7% | | | | | |
| Age (year) | 56,10 | 10,95 | 57,06** | 10,98 | 0,96 | 0,20 | 56,44 | 56,00 | 59,40 | 59,00 | 2,96** | 3,00 |
| Weight (kg) | 85,65 | 16,12 | 83,73** | 15,97 | -1,92 | 5,01 | 82,89 | 80,00 | 81,62 | 79,00 | -1,27* | -1,00 |
| BMI (kg/m2) | 31,76 | 5,01 | 31,07** | 4,98 | -0,69 | 1,91 | 31,17 | 30,40 | 30,77 | 30,10 | -0,40* | -0,40 |
| WC (cm) | 98,77 | 11,81 | 95,51** | 11,99 | -3,26 | 6,11 | 96,66 | 96,00 | 96,02 | 94,00 | -0,65 | -1,00 |
| SBP (mmHg) | 133,22 | 14,41 | 131,15 | 12,64 | -2,07 | 14,40 | 130,36 | 130,00 | 130,70 | 130,00 | 0,35 | 0,00 |
| DBP(mmHg) | 82,98 | 8,52 | 81,02* | 8,96 | -1,96 | 9,01 | 80,68 | 80,00 | 80,25 | 80,00 | -0,43 | 0,00 |
| Fasting glucose (mmol/l) | 5,28 | 0,75 | 5,39* | 0,65 | 0,11 | 0,72 | 5,22 | 5,20 | 5,33 | 5,29 | 0,11 | 0,16 |
| 2-h OGTT glucose (mmol/l) | 5,86 | 1,85 | 6,18 | 2,34 | 0,31 | 2,35 | 5,77 | 5,40 | 5,95 | 5,50 | 0,19 | 0,20 |
| TCH(mmol/l) | 5,56 | 1,00 | 5,33* | 0,98 | -0,23 | 1,17 | 5,53 | 5,50 | 5,29 | 5,27 | -0,24* | -0,14 |
| HDL(mmol/l) | 1,37 | 0,36 | 1,37 | 0,37 | 0,00 | 0,32 | 1,38 | 1,30 | 1,34 | 1,20 | -0,04 | -0,10 |
| TG(mmol/l) | 1,76 | 1,18 | 1,63 | 0,80 | -0,13 | 1,14 | 1,75 | 1,43 | 1,56 | 1,40 | -0,19 | 0,00 |
| Findrisk | 18,34 | 2,88 | 15,96** | 3,77 | -2,39 | 3,59 | 18,43 | 18,00 | 16,21 | 17,00 | -2,22** | -2,00 |
| IFG | 9,7% | | | 5,1% | | | 8,8% | | | 8,0% | | |
| IGT | 15,4% | | | 19,4% | | | 13,3% | | | 10,6% | | |
| NGT | 74,9% | | | 71,4% | | | 78,8% | | | 75,2% | | |

*p<0,05, **p<0,01 Key: BMI= body mass index, WC-waist circumference, SBP-systolic blood pressure, DBP-diastolic blood

pressure, OGTT-oral glucose tolerance test, TCH-total cholesterol, HDL-high density lipoprotein, TG-triglycerides,

IFG-impaired fasting glucose, IGT-impaired glucose tolerance, NGT-normal glucose tolerance

RESULTS

Statistical significant risk reduction at one year was maintained at 3 year in weight (82,9 vs 81,6kg), BMI(31,2 vs30,1kg/m2), serum total cholesterol (5,5vs5,4mmol/l),TG (1,85vs1,6mmol/l,(p<0,09)) and FINDRISC (18,4vs16,2) (p<0,05). 21% of participants lost ≥5% (mean weight loss =-8,5 kg sd=6,8) of initial body weight, 35 % lost less than 5% of initial weight (mean weight loss = -2,2 kg sd=1,1), 8% did not change weight and 35% increased weight (mean weight increase =3,6 kg sd=2,8)(p<0,05). After 3 years 6% of participants converted to diabetes, while 56 % of baseline IFG and IGT reversed to NGT.

Off the follow up completers 18% had increased physical activity over the year when compared with baseline 8,8%, 51,8% had decreased total fat in diet compared with baseline 37% (p<0,05), 60,5% compared to baseline 33,6 % changed the fat from saturated to unsaturated (p<0,01), 65,8 % increased consumption of fruit and vegetables compared to 29,8% at baseline (p<0,01).

CONCLUSIONS

Diabetes type 2 prevention through non intensive, real life lifestyle intervention with modest weight reduction is feasible in a primary health care setting and can be maintained during long time observation.

