blood pressure, family history of hypertension) based on 2001 model, GDM increased the risk of adverse outcomes that included neonatal intensive care unit (NICU), macrosomia, HDP, LGA, premature delivery and cesarean delivery in the model of 2010. The value of adjusted RR (95% CI) were: 2.58(1.36-4.83), 2.13 (1.48-3.07), 2.01(1.73-2.46), 1.67 (1.36-2.04), 1.48(1.02-2.15), 1.44 (1.26-1.63), respectively. The incidence of adverse maternal outcomes of GDM subjects in 2010 (78.50%) was less than that (94.68%) in 2001 ($X^2=13.22$, $p<0.01$).

CONCLUSIONS GDM had a close relationship with adverse perinatal outcomes in both 2001 and 2010. The rank of above outcomes had changed, with the most serious outcome being macrosomia in 2001 and NICU in 2010. Although the maternal outcomes have improved over the past 10 years, further efforts are needed to reduce adverse neonatal outcomes.

GW26-e4793
Comparative efficacy and acceptability of glycemic control of glucagon-like peptide-1 receptor agonists for type 2 diabetes: a systematic review and network meta-analysis
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OBJECTIVES The systematic review was to assess the comparative effects of GLP-1 RAs on glycemic control, hypoglycemia and treatment discontinuation for treating type 2 diabetes.

METHODS We searched MEDLINE, EMBASE, the Cochrane library, and www.clinicaltrials.gov from inception to June 1, 2014. Randomized controlled trials comparing a GLP-1 RA with placebo, active anti-diabetic drugs, or other kinds of GLP-1 RAs for type 2 diabetes were included. We only considered the doses of GLP-1 RAs used in routine clinical practice. Eligible trials should have available data on the outcomes of HbA1c <7%, hypoglycemia or treatment discontinuation, with the follow-up of at least 8 weeks. The revised JADAD scale was used to assess risk of bias of the included studies. Network meta-analysis using multivariate model with multi-arm trials adjusted was conducted. We applied loop-specific approach to test the assumption of consistency. Ranking of treatment effects was based on probability shown by the surface under the cumulative ranking curve.

RESULTS From a total of 1139 retrieved records, 78 eligible trials with 34,685 patients were included. 13 different treatments compared in the network included daily exenatide, weekly exenatide, lixisenatide, albiglutide, liraglutide, dulaglutide, sitagliptin, insulin, thiazolidinediones, sulphonylureas, metformin and Placebo. The mean and standard deviation of JADAD scores was 5.50 and 1.36, indicating overall low risk of bias of the trials. No significant differences were found on the outcome of HbA1c <7% between any of GLP-1 RAs and any of traditional anti-diabetes treatments. However, daily exenatide, lixisenatide, liraglutide and albiglutide induced significantly less hypoglycemia (odds ratio (95% CI): -0.37 (-0.65, -0.10), -0.22 (-0.34, -0.10), -0.25 (-0.38, -0.12), respectively) than other treatments. Compared with sulphonylureas there was significant reduction in hypoglycemia but higher discontinuation in GLP-1 RAs. Any of the GLP-1 RAs had similar odds of hypoglycemia or discontinuation compared to metformin. Weekly exenatide ranked top on the outcome of HbA1c <7%, sulphonylureas and liraglutide might have the most serious problem on hypoglycemia and treatment discontinuation respectively, 13.7% (10/73), 1.5% (2/128) and 13.4% (7/52) loops were inconsistent respectively for the outcome of HbA1c <7% hypoglycemia and treatment discontinuation, suggesting overall consistency.

CONCLUSIONS GLP-1 RAs may have similar efficacy of lowering HbA1c to traditional anti-diabetes treatments and probably induce less hypoglycemia and higher treatment discontinuation. Insufficient number of trials in some pairwise comparisons may produce inconsistency and uncertainty of the results, which require further robust evidence from well-designed trials.

GW26-e1839
Efficacy of exercise-only versus exercise-diet in the prevention of type 2 diabetes among pre-diabetic population: A meta-analysis
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OBJECTIVES Exercise is considered a protective factor in the prevention of type 2 diabetes (T2D), though its role as a sole treatment for pre-diabetes remains unknown. The present meta-analysis compares the effect of exercise-only to exercise-diet interventions on plasma glucose levels among a pre-diabetic population.

METHODS A literature search using PUBMED, EMBASE and COCHRANE databases yielded 12 studies for analysis. Cochrane Collaborations tool and the Jadad scale were used to assess the quality of the included articles. A random effects model was used to calculate the pooled effect. Weighted mean difference (WMD) was calculated to indicate the change of fast glucose level. Meta-regression was undertaken to explore the impact of risk of bias for the included studies and the forest plot was conducted to explore the relationship between interventions.

RESULTS A total of 4,021 subjects were included in the analysis, 2,045 of them in the intervention group and 1,976 in the control group. Compared to the exercise-only interventions, the exercise-diet interventions showed a significant effect on decreasing fasting plasma glucose ($Z=12.06$, $p<0.05$). The subgroup effect of exercise-only interventions did not produce a statistically significant result ($Z=1.91$, $p>0.05$), however, it still revealed a significantly clinical decrease in fasting plasma glucose(WMD=−0.19, 95%CI=−0.18,0.00). According to four different intervention periods, the shortest period intervention (less than 1year) did not display a significant effect for glucose control ($Z=1.35$, $p>0.05$). and its WMD (95% CI) was −0.12 mmol/L (-0.20,0.05). There was a significant effect ($Z=7.19$, $p<0.05$) in 1-year subgroup. The longer the intervention period was, the higher the subgroup effect was. The pooled effect in ≥ 3 years subgroup was the highest with WMD(95% CI)=−0.24 mmol/L (-0.62,0.15). When participants were divided into two groups according to age, individuals within 40-55 years was included into younger subgroup and all others were assigned to elderly subgroup. No significant subgroup pooled effects were found in younger subgroup ($Z=1.65$, $p>0.05$). However, in elderly subgroup, there was a significant effect($Z=10.31$, $p<0.05$). In the two groups, the subtotal effects were $-0.27 (-0.60,0.05)$ and $-0.19 (-0.22, -0.15)$. respectively. As for different regions, significant heterogeneity existed among studies conducted in America and China, but not in Europe ($I^2=47.00\%$). The subtotal effect was varied indifferent regions. The studies conducted among the European population displayed a higher subtotal effect and its WMD was $-0.22$, its 95% CI was (−0.27,−0.17)

CONCLUSIONS These results indicated both exercise-only and exercise-diet intervention have displayed effect on decreasing the fasting plasma glucose, with a better results in later group. The pooled effect was more significant in longer intervention period, elderly age group and European group.

GW26-e2225
Changes in incidence and risk factors of gestational diabetes mellitus and its postpartum women in Shanghai: a comparative study between year 2001 and 2010
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OBJECTIVES To determine the incidences of gestational diabetes mellitus (GDM) in Shanghai in two time points (2001 and 2010) respectively, and to further evaluate whether or not these risk factors of GDM have changed over time.
METHODS We performed a retrospective double cohort study of 11241 women who delivered in Shanghai First Maternity and Infant Hospital and Shanghai Tenth People’s Hospital. Multivariate logistic regression analysis was conducted to explore potential risk factors of GDM. Moreover, longitudinal comparison of ten years period were made.

RESULTS According to National Diabetes Data Group (NDDG) Standard, the incidences of GDM were 2.69% and 5.59% in 2001 and 2010, respectively. The older were the subjects group, the higher the incidence of GDM would be both in 2001 and 2010 (P < 0.01), and the incidences of GDM in two subgroups (25-29 yrs, 30-34 yrs group) were higher than the incidence in 2001. In addition, the incidence of GDM increased significantly with elevated body mass index (BMI) in 2010 (P < 0.01). As shown in multivariate logistic regression models, BMI and hemoglobin were independent risk factors for GDM in 2001, Odds ratio (OR) values and its 95% confidence interval (CI) were 2.54 (1.12-5.75) and 1.04 (1.01-1.06), respectively. However, independent risk factors for GDM in 2010 included BMI > 24 kg/m², obstetric abnormality, history of diabetes and systolic blood pressure, OR value and 95% CI were 2.06 (1.63-2.61), 1.44 (1.04-2.00), 3.02 (1.94-4.72), 1.01 (1.00-1.02). Noteworthy, maternal age was also an independent risk factor for GDM in 2010, the older were the subjects group, the higher OR would be. OR (95% CI) of three subgroups (25-29 yrs, 30-34 yrs and over 35 yrs group) were 2.81 (1.30-6.06), 4.70 (2.18-10.15), 7.99 (3.59-17.76), respectively. Height was a protective factor for GDM, its OR (95% CI) was 0.98 (0.97-0.99).

CONCLUSIONS The increasing incidence of GDM in combined with characteristics of risk factors indicates a significant public burden on health services. More effective management and timely intervention regarding these high-risk pregnancies will also need to be addressed in the future.

GW26-e2968 Selenium prevents from atherosclerosis formation by maintaining antioxidant activation through the Akt/ GSK3β/ Nrf2 axis in diabetes
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OBJECTIVES The essential trace element, selenium (Se), has multiple biological activities. The present study aimed to evaluate the effect of antioxidant capacity mobilized by selenium-regulated Nrf2 on atherosclerosis formation in diabetes mellitus and possible mechanisms.

METHODS 20 male Sprague-Dawley rats were randomly assigned into 2 groups: STZ-induced diabetes with Se supplementation group (DM–SeS, 1 mg selenium/kg diet was given for 5 weeks every day) and STZ-induced diabetes with Se-deficient group (DM–SeD, < 0.05 mg selenium/kg diet was given for 5 weeks every day). Atherosclerotic plaques were stained with Oil-red-O and counterstained with hematoxylin. Both oxidative stress and antioxidant capacity were measured. Expression of phosphorylation of Akt/GSK3β and Nrf2 and Fyn expression were examined by Western blot.

RESULTS Compared with DM–SeD, Se supplementation in diabetic rats significantly increased serum Se levels (126±20ug/L in SeS vs. 40±15 ug/L in SeD group, P < 0.05) and inhibited atherosclerotic plaques formation along with increased antioxidant selenoenzymes glutathione peroxidase (GPx) activity (31%, P < 0.05), the GSH concentration (18%, P < 0.05) and HO-1 expression (23%, P < 0.05) in artery tissue. Contrarily, decreased ROS generation and lipid peroxidation (LP) levels were observed. Se supplementation also showed a significant enhance in nuclear factor-erythroid 2-related factor 2 (Nrf2) expression and transcription action along with significant increases in Akt and GSK-β3 phosphorylation, and decrease in nuclear accumulation of Fyn (α Nrf2 negative regulator). In vitro study with endothelial cells showed that high glucose-induced oxidative stress could be completely prevented by simultaneous Se supplementation. Furthermore, increased phosphorylation of Akt and GSK3β and Nrf2 transcription action by Se addition were also blocked by the Akt inhibitor MK2206 and Akt negative regulators PTEN, which was accompanied by increase in nuclear accumulation of Fyn.

CONCLUSIONS It is suggested that Se is required for maintaining antioxidant activation through the Akt/ GSK3β/ Fyn -Nrf2 axis in diabetic condition. Se supplementation may be useful for preventing from atherosclerosis development in diabetes.

GW26-e0108 Comparison of Invasive Versus Conservative Strategy for the Treatment of Diabetes Mellitus with Acute Coronary Syndromes: A Meta-Analysis of Randomized Controlled Trials
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OBJECTIVES The aim of this study was to compare the outcomes of invasive versus conservative strategy in diabetes mellitus (DM) patients with acute coronary syndrome (ACS).

METHODS 9 randomized, controlled trials (RCT) involving 1,789 patients were included. We evaluated the risk ratios (RR) and 95% confidence intervals (CIs) of myocardial infarction (MI) following invasive versus conservative strategy for DM patients with ACS as primary endpoints. The rates of death and rehospitalization with ACS as secondary endpoints were compared.

RESULTS In a comparison of conservative strategy, the rates of MI (RR: 0.71; 95% CI: 0.55 to 0.92, p < 0.01) and rehospitalization with ACS (RR: 0.75; 95% CI: 0.61 to 0.92, p < 0.01) of invasive strategy for DM patients with ACS were significantly lower. There was no significant difference in death (RR: 1.03; 95% CI: 0.70 to 1.45, p > 0.05) between invasive and conservative strategy groups.

CONCLUSIONS In DM patients with ACS, invasive strategy comparing with conservative strategy reduced the risk of MI and rehospitalization with ACS.