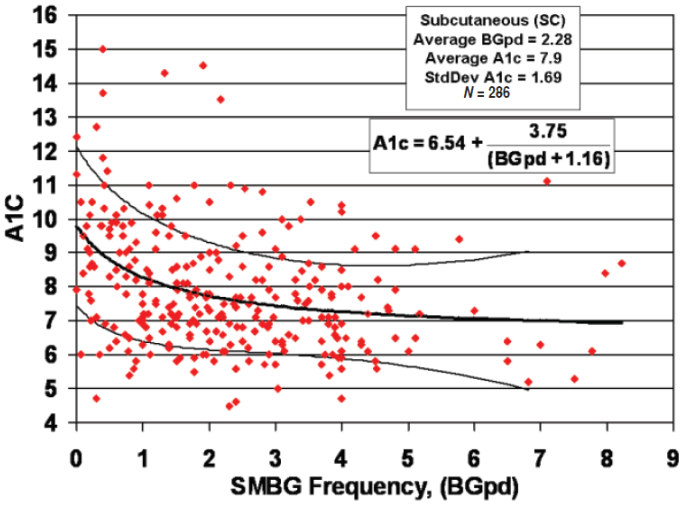
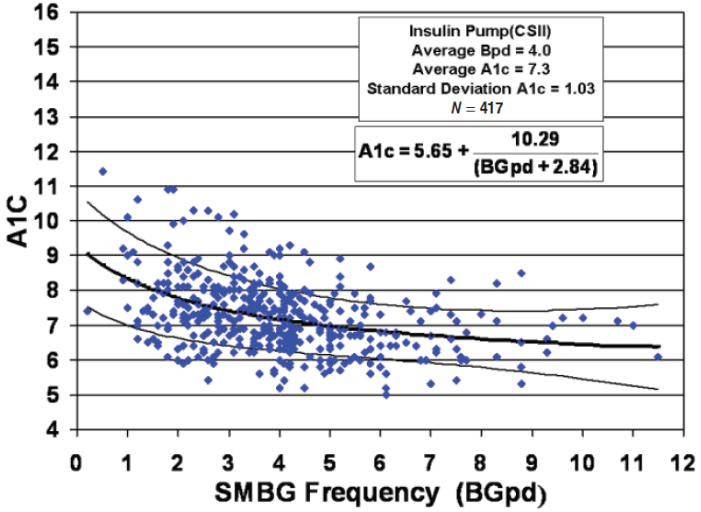
・糖尿病のこれからを考える会in 南奈良

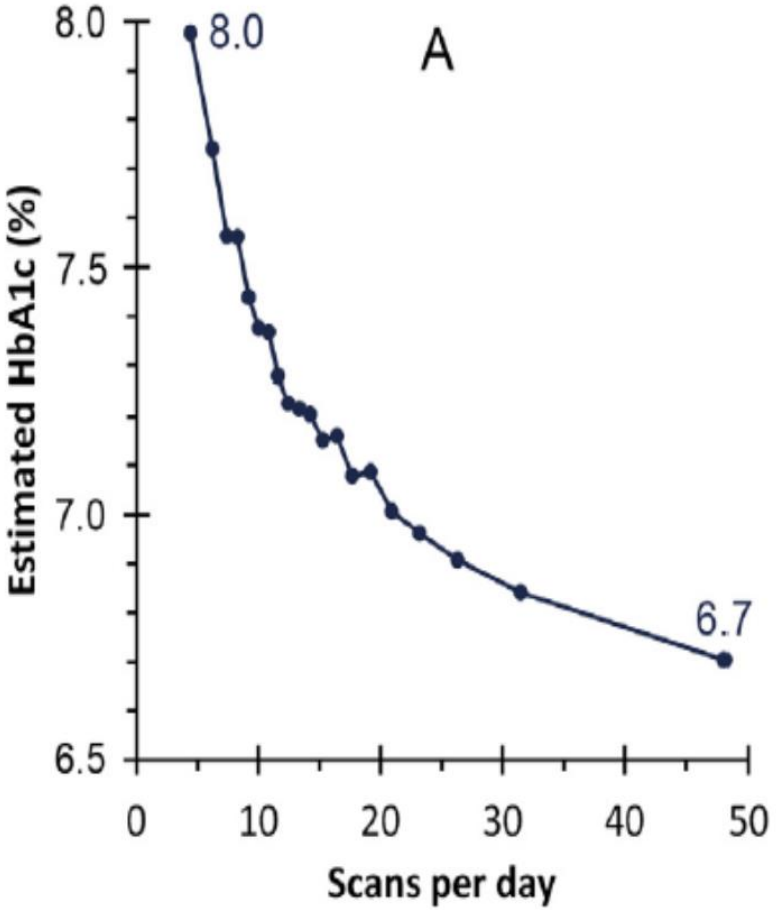
・グリニドの使い方

ましたに内科クリニック
増谷　剛

自己血糖測定がなくなりCGM、FGMが中心になる







J Diabetes Sci Technol. 2007 Nov;1(6):850-6.
Diabetes Res Clin Pract. 2018 Mar;137:37-46.

CGM（FGM）の管理目標（HbA1c測定の意義がうすれる）

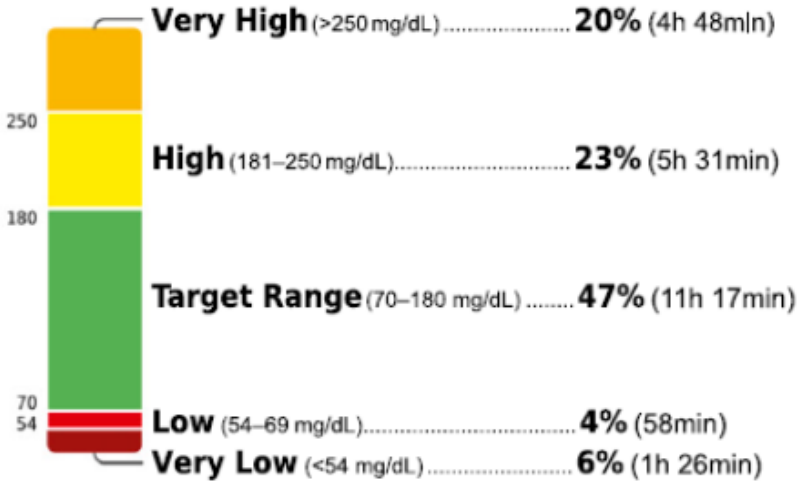
GLUCOSE STATISTICS AND TARGETS

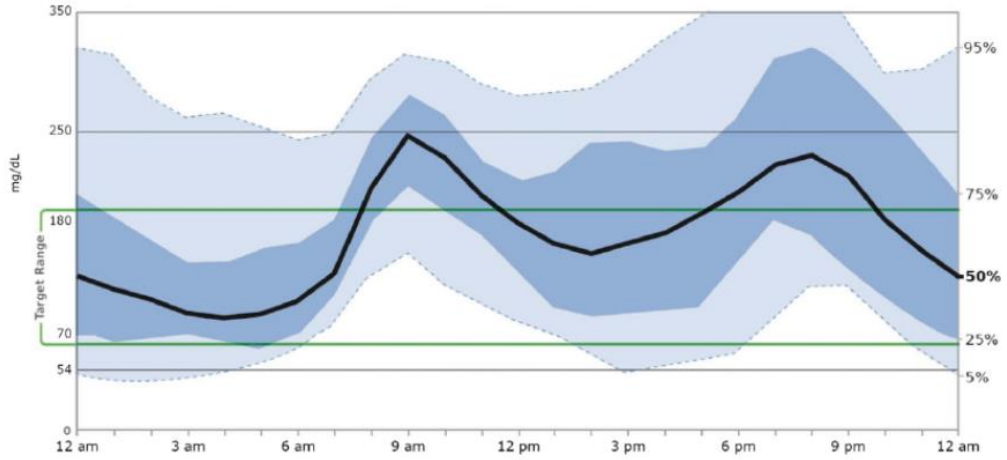
26 Feb 2019–10 Mar 2019	**13 days**
% Time CGM is Active	**99.9%**

Glucose Ranges	**Targets** [% of Readings (Time/Day)]
Target Range 70–180 mg/dL	Greater than 70% (16h 48min)
Below 70 mg/dL	Less than 4% (58min)
Below 54 mg/dL	Less than 1% (14min)
Above 180 mg/dL	Less than 25% (6h)
Above 250 mg/dL	Less than 5% (1h 12min)

Each 5% increase in time in range (70–180 mg/dL) is clinically beneficial.

TIME IN RANGES



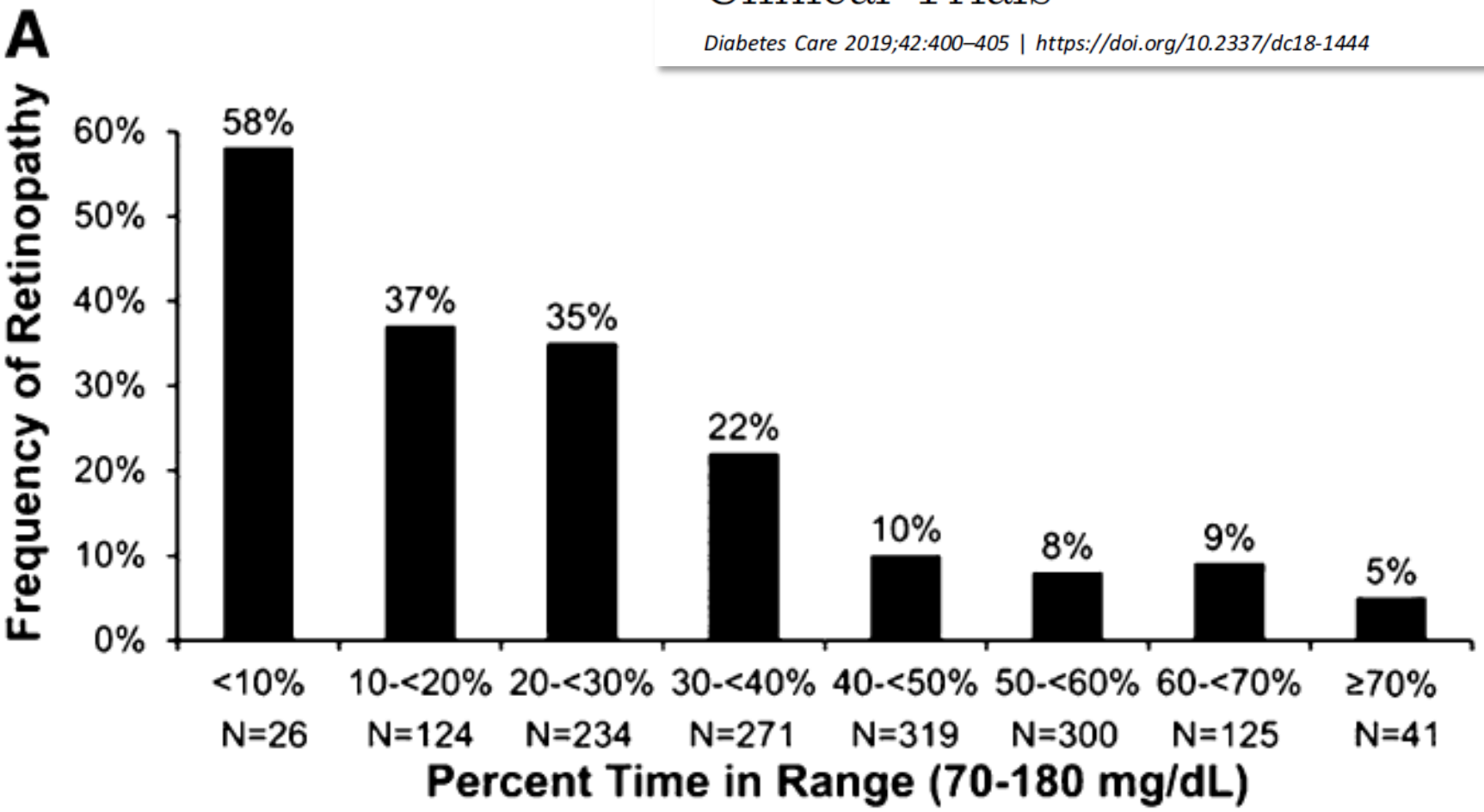


Diabetes Care Publish Ahead of Print, published online June 8, 2019

TIRと網膜症の進展（DCCT）

Validation of Time in Range as an Outcome Measure for Diabetes Clinical Trials

Diabetes Care 2019;42:400–405 | https://doi.org/10.2337/dc18-1444



TIRと網膜症（2型糖尿病）

Association of Time in Range, as Assessed by Continuous Glucose Monitoring, With Diabetic Retinopathy in Type 2 Diabetes

Diabetes Care 2018;41:2370–2376 | https://doi.org/10.2337/dc18-1131

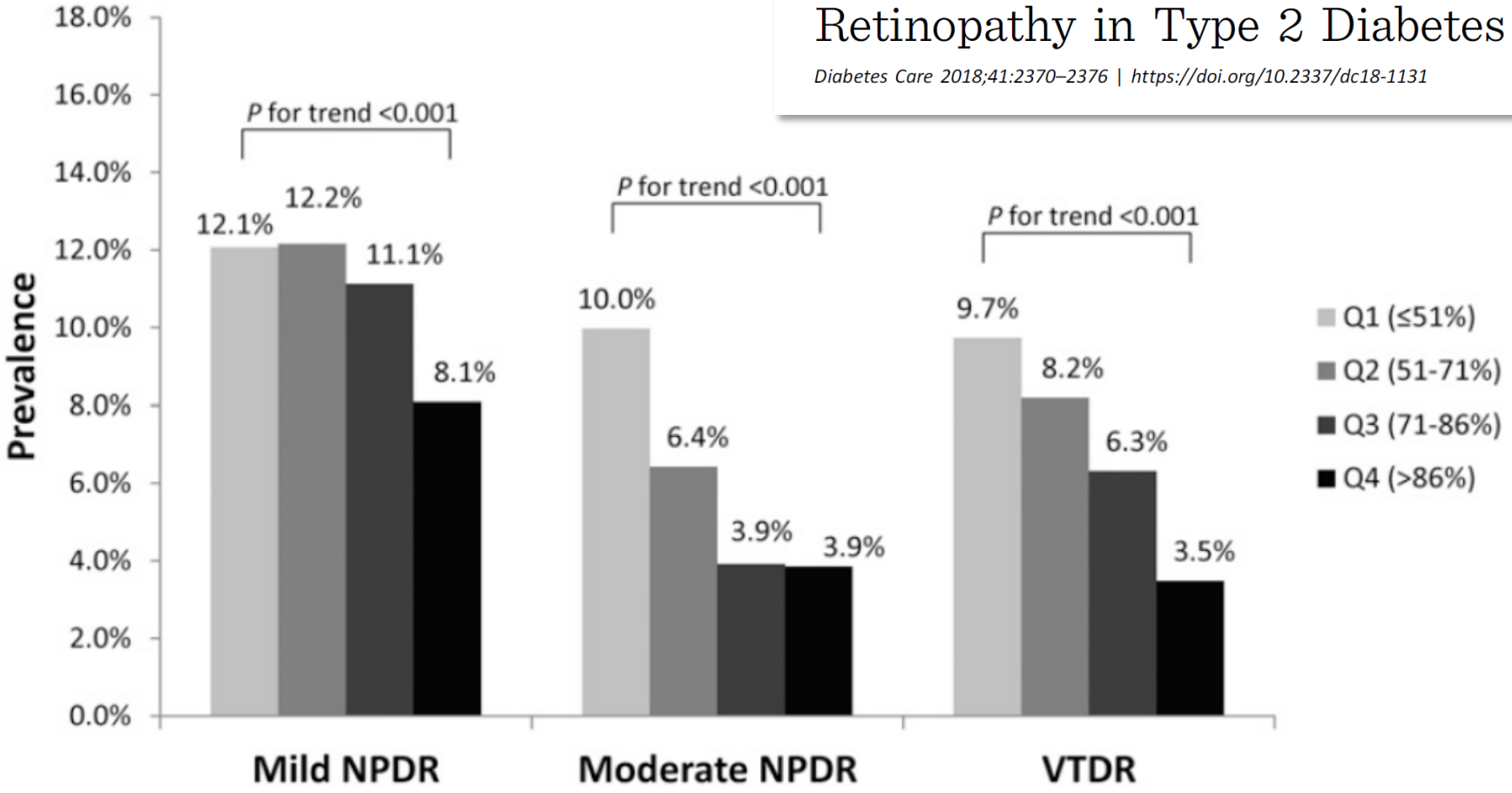
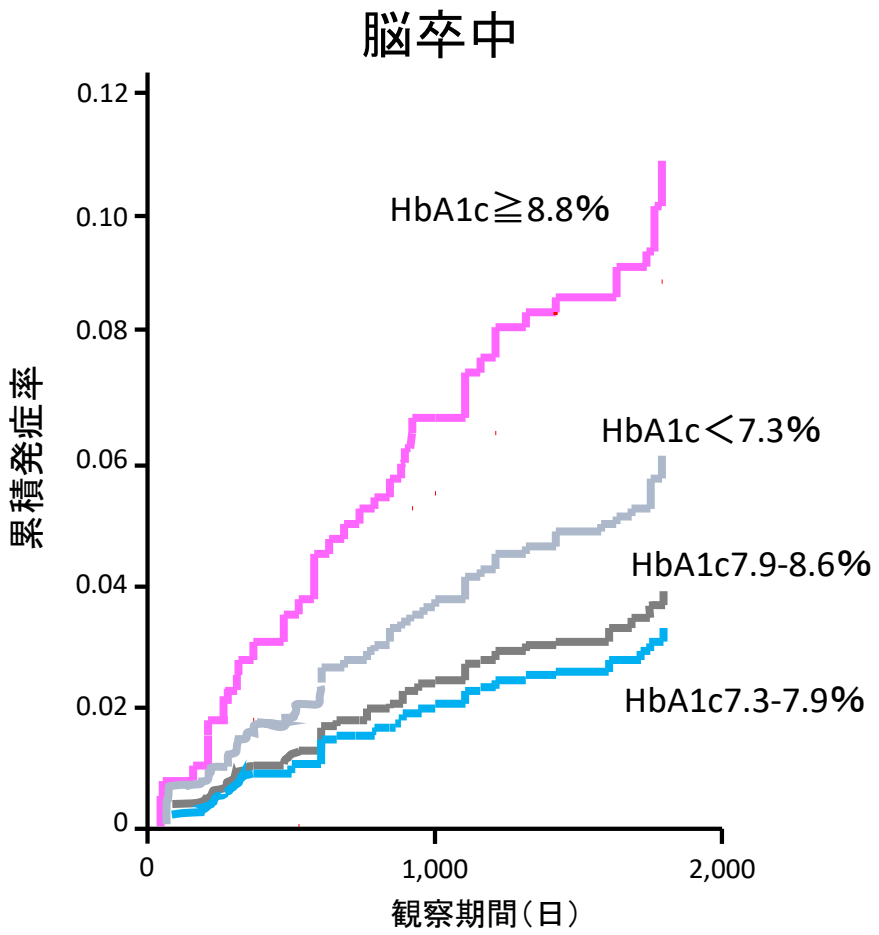
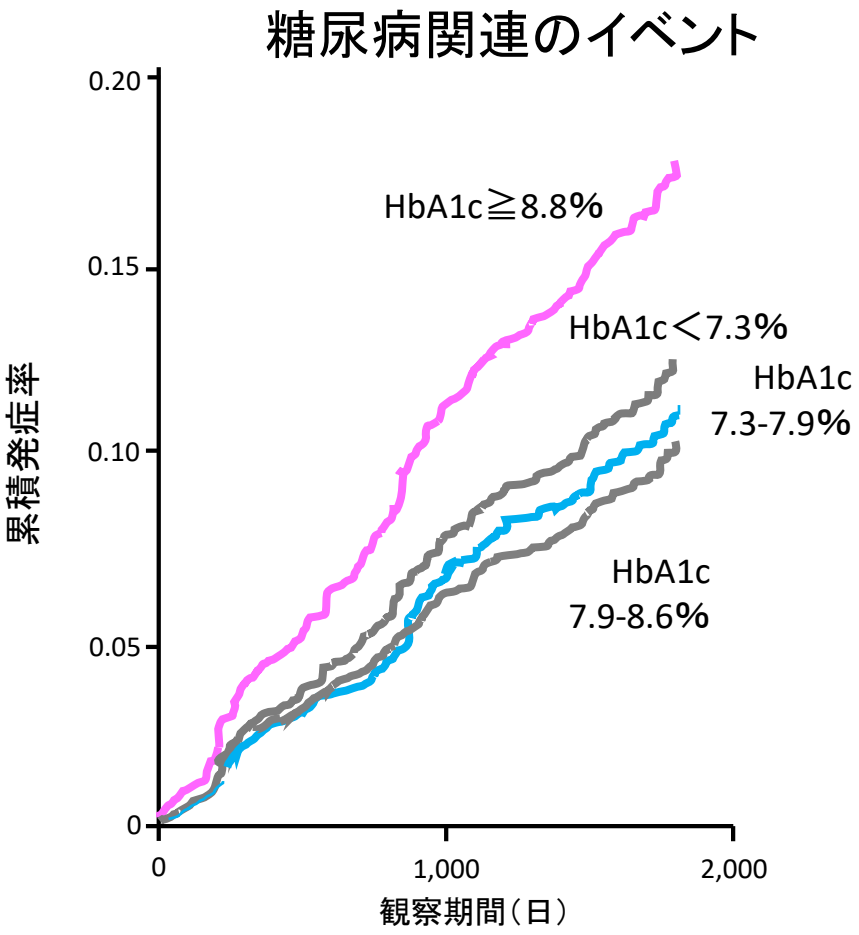


Figure 1—Prevalence of DR by severity, as a function of TIR quartile.

J-EDIT
HbA1cレベルとイベント発症



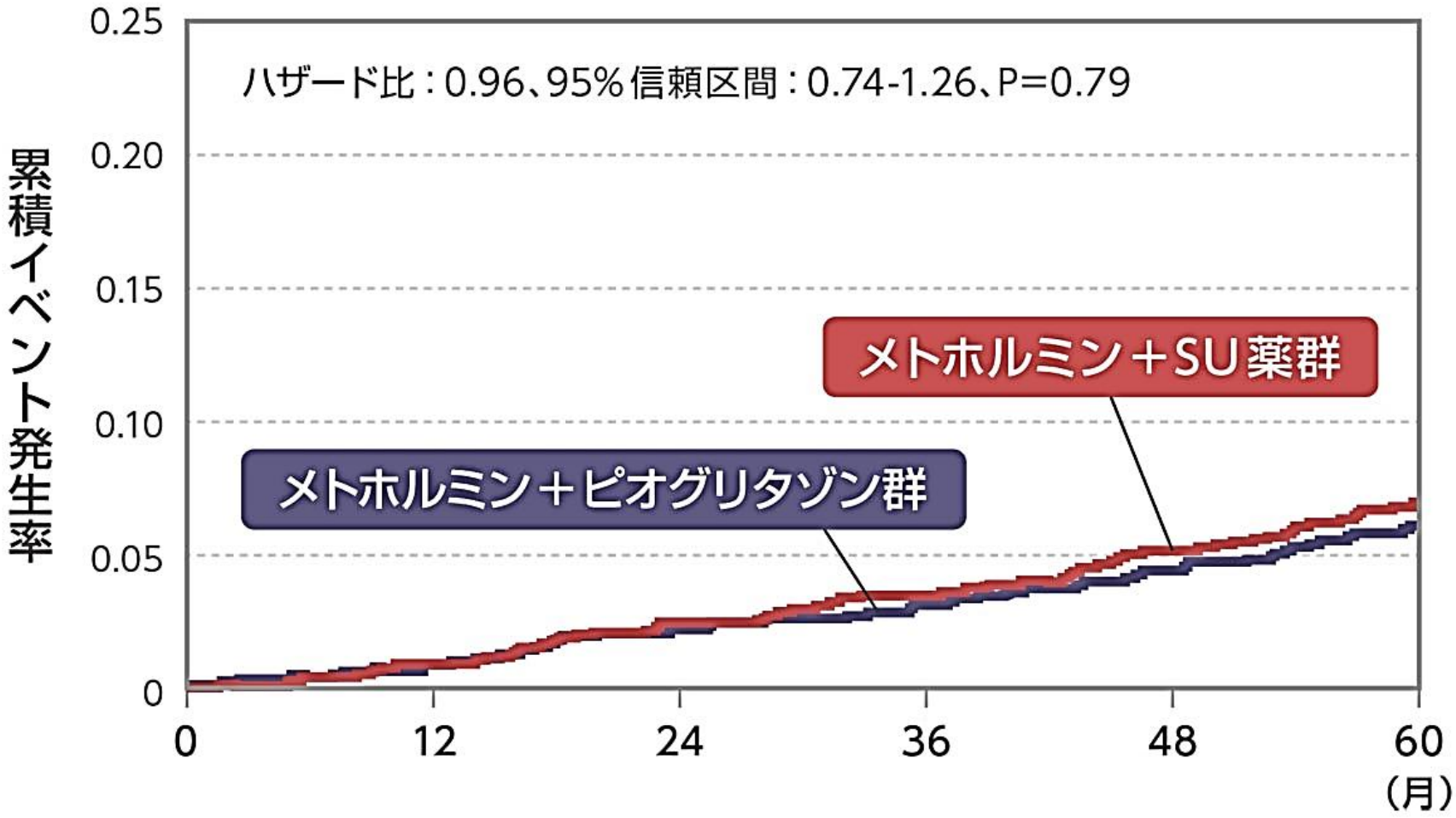


対象：J-EDIT（高齢者糖尿病に対する無作為、多施設共同、プロスペクティブ、介入研究）に登録、1年以上追跡した高齢者糖尿病患者1,173名。
方法：1年以上追跡した被験者993名（従来治療群496名、強化治療群497名）のデータでランドマーク分析を行い、高齢者糖尿病患者のLDL（低比重リポタンパク）、HDL（高比重リポ蛋白）、non-HDL-コレステロール、HbA1cと脳卒中、総死亡、糖尿病に関連した血管イベントに対する影響について検討した

J-EDIT：Japanese Elderly Diabetes Intervention Trial

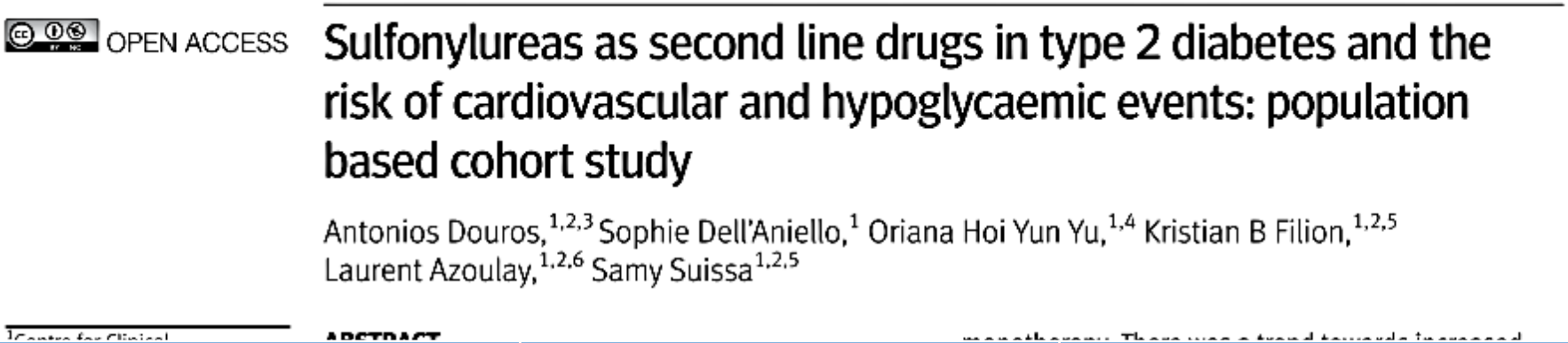
Araki A. et al.: Geriatr Gerontol Int. 2012 Apr; 12 Suppl 1: 18-28.

SU薬・グリニド系薬は血管合併症予防に関する有効性を示唆するエビデンスがメトホルミンに次いで豊富である薬剤である



Lancet Diabetes Endocrinol. 2017 Nov;5(11):887-897.

メトホルミンにSUを追加しても血管イベントは増えない



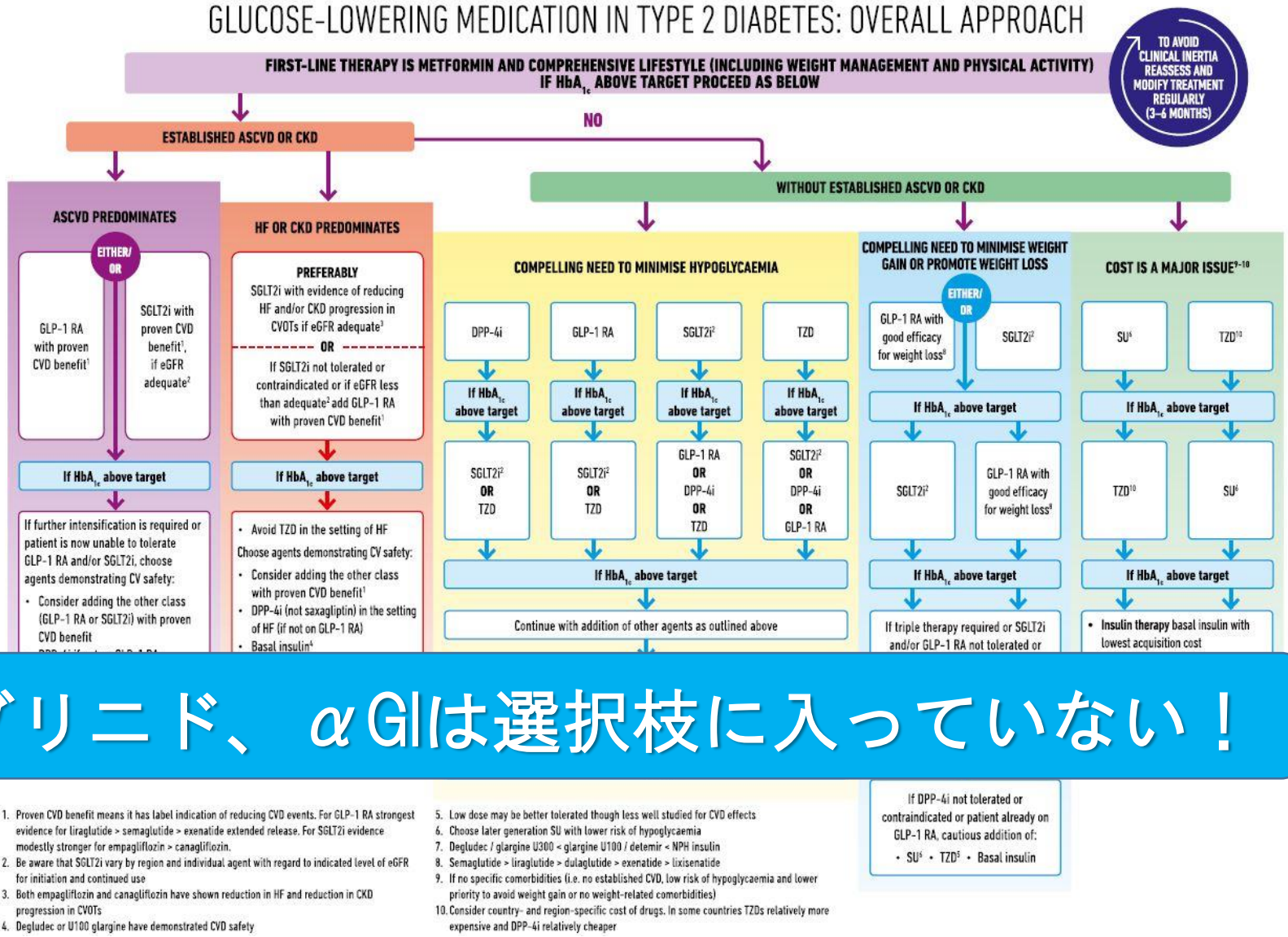
OPEN ACCESS

Sulfonylureas as second line drugs in type 2 diabetes and the risk of cardiovascular and hypoglycaemic events: population based cohort study

Antonios Douros,[1,2,3] Sophie Dell'Aniello,[1] Oriana Hoi Yun Yu,[1,4] Kristian B Filion,[1,2,5] Laurent Azoulay,[1,2,6] Samy Suissa[1,2,5]

メトホルミン 単独療法継続と比較	メトホルミンから SU薬への切り替え群	SU薬の上乗せ群
心筋梗塞	HR：1.73 (1.32～2.26)	HR：1.02 (0.79～1.31)
心血管死	HR：1.56 (1.24～1.97)	HR：0.95 (0.75～1.20)
全死亡	HR：1.60 (1.39～1.84)	HR：1.09 (0.95～1.25)
重症低血糖	HR：8.14 (4.74～13.98)	HR 7.27 (4.34～12.16)
虚血性脳卒中	HR：1.21 (0.89～1.65)	HR：1.26 (0.97～1.63)

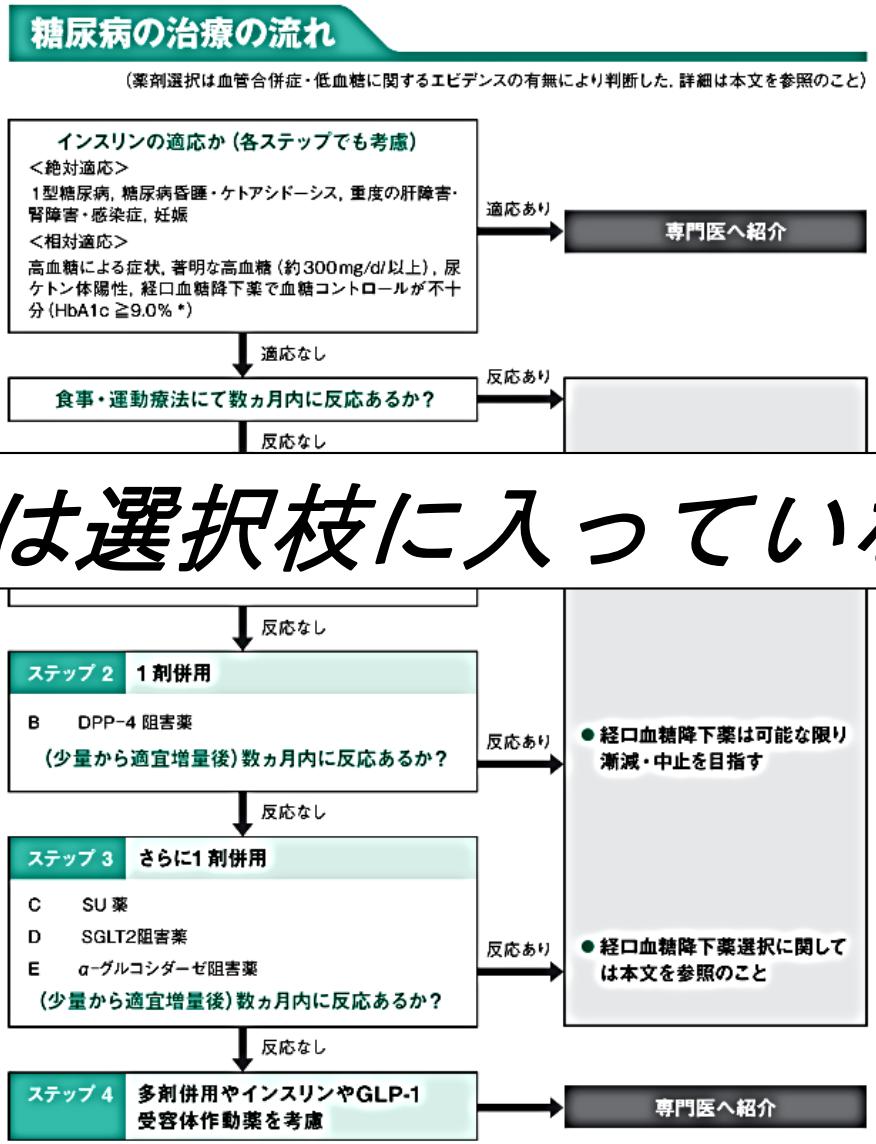
ADAコンセンサスステートメントでは



グリニド、αGIは選択枝に入っていない！

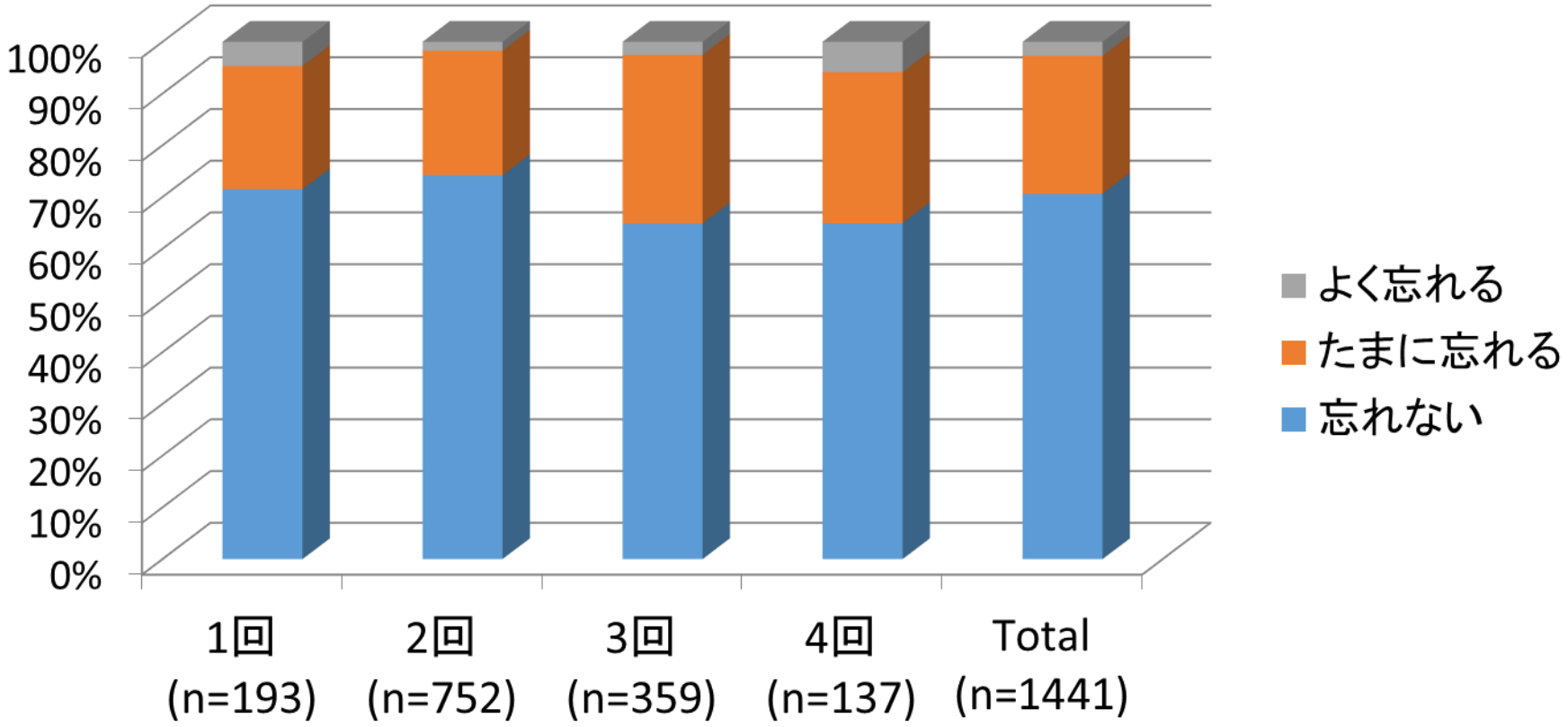
1. Proven CVD benefit means it has label indication of reducing CVD events. For GLP-1 RA strongest evidence for liraglutide > semaglutide > exenatide extended release. For SGLT2i evidence modestly stronger for empagliflozin > canagliflozin.
2. Be aware that SGLT2i vary by region and individual agent with regard to indicated level of eGFR for initiation and continued use
3. Both empagliflozin and canagliflozin have shown reduction in HF and reduction in CKD progression in CVOTs
4. Degludec or U100 glargine have demonstrated CVD safety
5. Low dose may be better tolerated though less well studied for CVD effects
6. Choose later generation SU with lower risk of hypoglycaemia
7. Degludec / glargine U300 < glargine U100 / detemir < NPH insulin
8. Semaglutide > liraglutide > dulaglutide > exenatide > lixisenatide
9. If no specific comorbidities (i.e. no established CVD, low risk of hypoglycaemia and lower priority to avoid weight gain or no weight-related comorbidities)
10. Consider country- and region-specific cost of drugs. In some countries TZDs relatively more expensive and DPP-4i relatively cheaper

糖尿病標準治療マニュアル（一般診療所・クリニック向け）



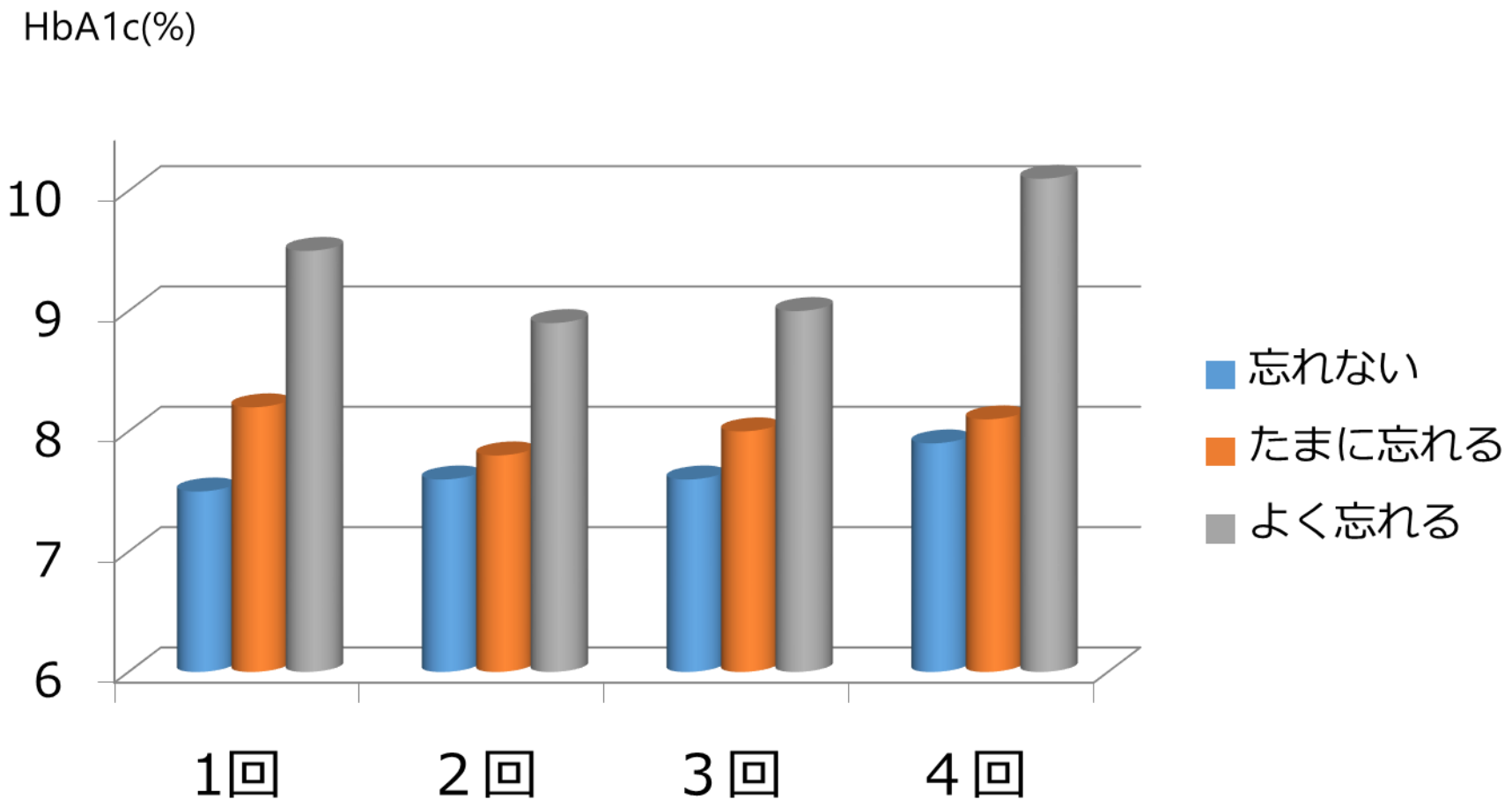
グリニドは選択枝に入っていない！

インスリン注射アドヒアランス（実行度）について



Diabetes Res Clin Pract. 2013 May;100(2):189-94.

アドヒアランス（実行度）と治療効果の関係（インスリン）



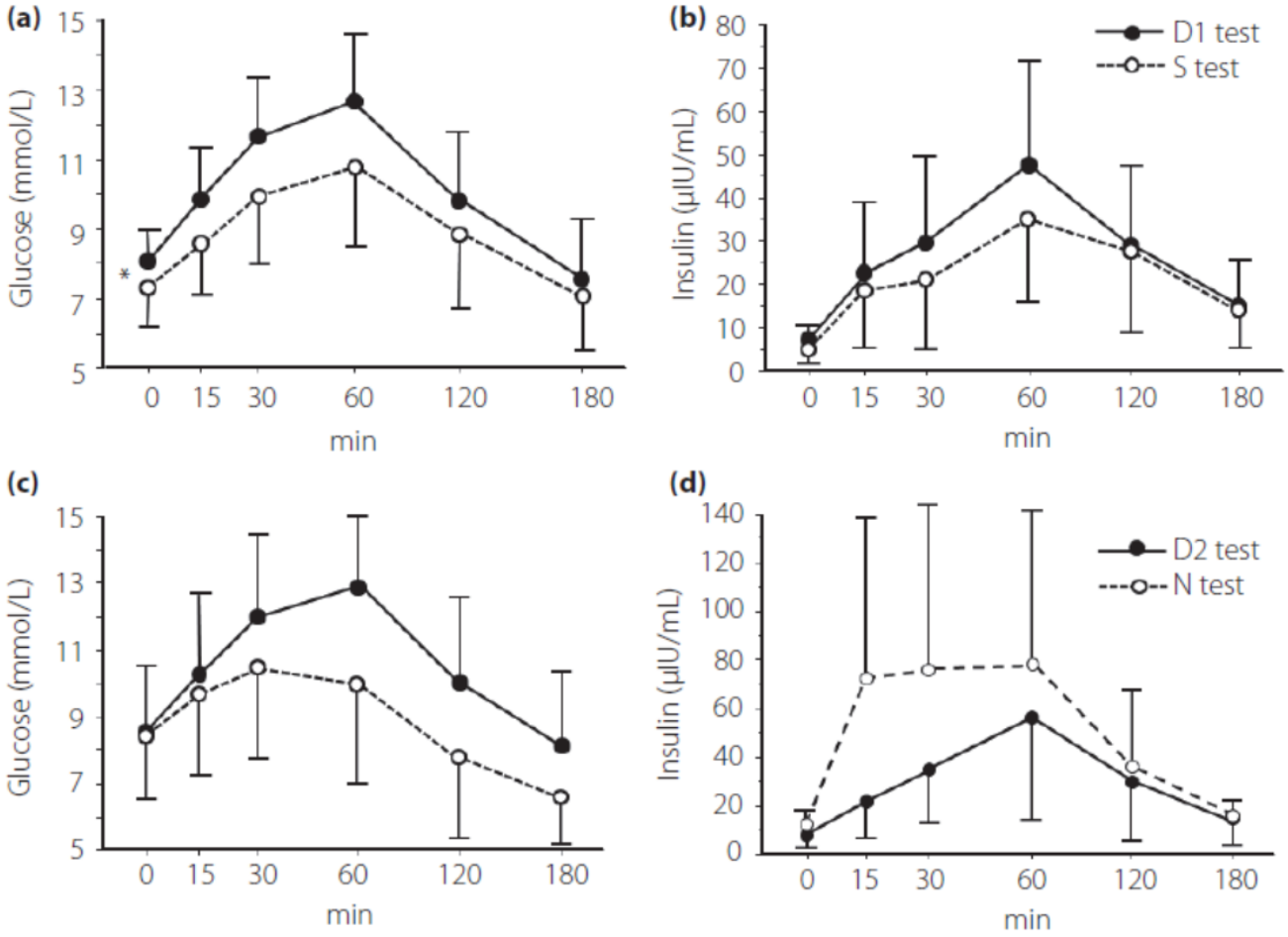
Diabetes Res Clin Pract. 2013 May;100(2):189-94.

JDI Journal of Diabetes Investigation Open access
Official Journal of the Asian Association for the Study of Diabetes
CLINICAL TRIAL

Comparison of sitagliptin with nateglinide on postprandial glucose and related hormones in drug-naïve Japanese patients with type 2 diabetes mellitus: A pilot study

Masumi Tanimoto[1], Akio Kanazawa[1,2]*, Takahisa Hirose[1]†, Tomoaki Yoshihara[1], Saeko Kobayashi-Kimura[1], Risa Nakanishi[1]‡, Yuka Tosaka[1], Ruri Sasaki-Omote[1], Kyoko Kudo-Fujimaki[1], Koji Komiya[1], Fuki Ikeda[1], Yuki Someya[1], Tomoya Mita[1], Yoshio Fujitani[1], Hirotaka Watada[1,2,3,4]

[1]Department of Metabolism & Endocrinology, [2]Center for Therapeutic Innovations in Diabetes, [3]Center for Molecular Diabetology, and [4]Sportology Center, Juntendo University Graduate School of Medicine, Tokyo, Japan

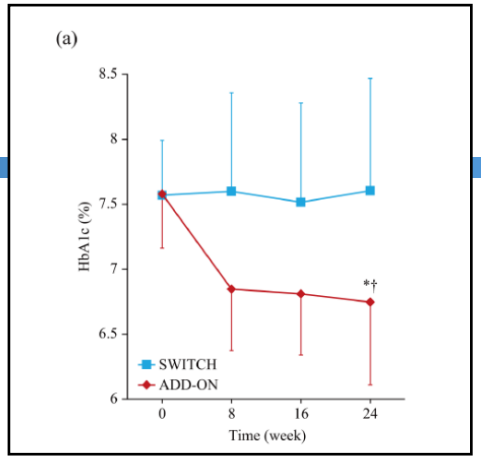


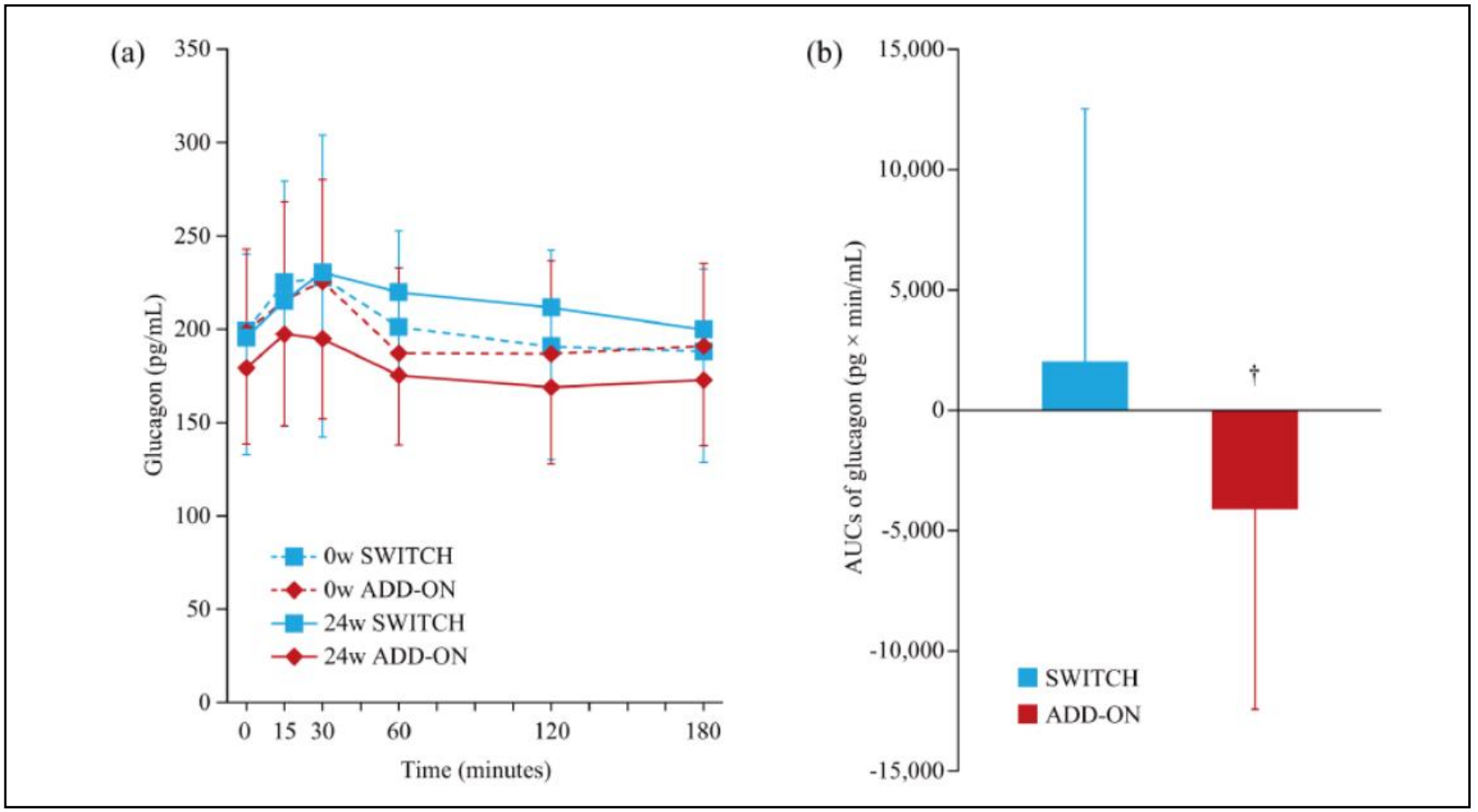
Endocrine Journal 2016, 63 (12), 1087-1098

ORIGINAL

Efficacy and safety of repaglinide added to sitagliptin in Japanese patients with type 2 diabetes: A randomized 24-week open-label clinical trial

Akihiro Nishimura[1), 2)], Shuki Usui[1)], Naoki Kumashiro[1)], Hiroshi Uchino[1)], Azusa Yamato[2)], Daijiro Yasuda[2)], Kaoru Nagasawa[2)], Minoru Okubo[2)], Yasumichi Mori[2)] and Takahisa Hirose[1)]





まとめ

- インスリン治療における血糖モニタリングはFGM、rt-CGMが中心となりHbA1cの意義もなくなってくる。
- インスリン強化療法が最終治療手段であるならばとグリニドはアドヒアランス、健康リテラシーを確認するためには欠かせない薬剤である。
- SU、グリニドは世の中で思われているほど悪者ではありません。
- SU、グリニドの特性、強さ、組み合わせを意識し、低血糖が疑われる症例に対して積極的にCGMを行えば、SU、グリニドは極めて有用薬剤だと思います。