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Цереброваскулярные заболевания и нарушения сна

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ГЕНЕТИЧЕСКИЙ ПОЛИМОРФИЗМ В РАЗВИТИИ СИНДРОМА ОБСТРУКТИВНОГО АПНОЭ ВО СНЕ: СОВРЕМЕННОЕ СОСТОЯНИЕ ПРОБЛЕМЫ

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Резюме. Представлен обзор исследований, в которых изучался полиморфизм генов, кодирующих компоненты ренин-ангиотензин-альдостероновой системы, системы воспаления, серотонинергической системы, рецепторы лептина, метаболизма липидов и белков симпатoadреналовой системы у больных с синдромом обструктивного апноэ во сне.

Выводы. К настоящему времени в различных популяциях человека доказана ассоциация между риском развития СОАС и полиморфизмом аллеля 308(G/A) в гене TNF- α ; аллелей A и 10 в гене 5-HTTVNTR; аллеля Pro12Ala в гене PPAR- γ и между геном Apo E.

Научно-практический журнал, Т. 20, № 4. 2017 год

AHA STATISTICAL UPDATE

Heart Disease and Stroke Statistics— 2018 Update

A Report From the American Heart Association

WRITING GROUP MEMBERS

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Each chapter l
C



Stroke (Cerebrovascular Disease)

(Chapter 13)

- Although there has been considerable reduction in stroke risks and stroke outcomes, the racial and geographic disparities remain significant, with African Americans and residents of the southeastern United States experiencing the greatest excess disease burden. According to data from the Centers for Disease Control and Prevention 2015 Behavioral Risk Factor Surveillance System, 2.6% of non-Hispanic whites, 4.1% of non-Hispanic blacks, 1.5% of Asian/Pacific Islanders, 2.3% of Hispanics (of any race), 5.2% of American Indian/Alaska Natives, and 4.7% of other races or multiracial people had a history of stroke. Stroke prevalence in adults is 2.7% in the United States, with the lowest prevalence in Minnesota (1.9%) and the highest prevalence in Alabama (4.3%).





Figure. Life's Simple 7.

Seven approaches to staying heart healthy: be active, keep a healthy weight, learn about cholesterol, don't smoke or use smokeless tobacco, eat a heart-healthy diet, keep blood pressure healthy, and learn about blood sugar and diabetes mellitus.

1. Будь физически **активен**
2. Поддерживай здоровый **вес**
3. Узнай про **холестерин**
4. Не кури и не используй **табак**
5. Ешь здоровую **пищу**
6. Поддерживай нормальное **артериальное давление**
7. Знай о **сахаре в крови** и сахарном диабете



In the US, substantially higher tobacco use rates are found in low socioeconomic status, Native American, and lesbian, gay, bisexual, or transgender people reporting disability or activity limitations, as well as mentally ill populations.

В США табак используют чаще
лица низкого
социоэкономического статуса,
индейцы, лесбиянки, геи,
бисексуалы или трансгендеры с
инвалидностью о ограничением
возможности передвигаться и
ментально больные



Sleep and Breathing

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SLEEP BREATHING PHYSIOLOGY AND DISORDERS • ORIGINAL ARTICLE

A meta-analysis of obstructive sleep apnea in patients with cerebrovascular disease

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Introduction

Cerebrovascular(CV) disease is a major health problem globally. Due to improvements in medical care and secondary prevention, overall incidence rates are falling [1, 2]. With aging, the risk of CV is predicted to rise [3], and health-care costs will remain high.



В связи с улучшением медицинской помощи и вторичной профилактики общие показатели заболеваемости цереброваскулярными заболеваниями в США **падают**

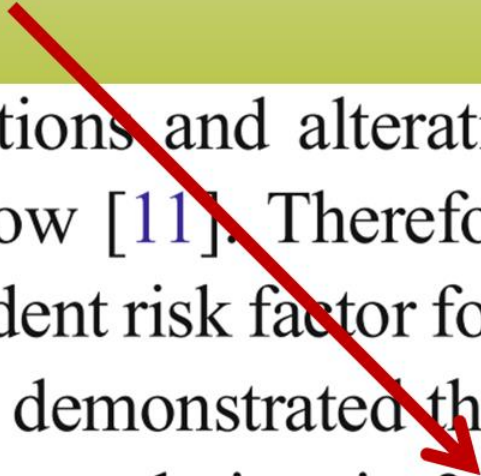
Obstructive sleep apnea (OSA) is characterized by frequent episodes of partial/complete interruption of ventilation during sleep due to collapse of the pharyngeal airway [4–6]. At the same time, given the epidemic of obesity, which is an important risk factor for OSA, the prevalence of OSA is undoubtedly rising [7]. Sleep is known to be vitally important for public health, quality of life, and overall well-being in diseased as well as non-diseased populations [8–10].



Обструктивные апноэ во сне характеризуются частыми эпизодами частичной или полной остановки вентиляции во время сна из-за спадения фарингеального пространства



Частота в общей популяции



desaturations and alterations in blood pressure and cerebral blood flow [11]. Therefore, OSA has been implicated as an independent risk factor for CV disease [12, 13]. Multiple studies have demonstrated that the prevalence of OSA within the general population is 3–7% [5, 14], but the prevalence is projected to rise to 30–70% in people who have CV disease [15]. People diagnosed by apnea-hypopnea index (AHI) with mild OSA ($5 \leq \text{AHI} < 15$) carry a 2.44-fold greater risk of cerebrovascular events, whereas moderate or severe OSA ($\text{AHI} \geq 15$) carries a 3.56-fold greater risk compared to people with a normal AHI [16].

Частота среди лиц с ЦВЗ

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При незначительном увеличении индекса апноэ-гопноэ (от 5 до 15), риск ЦВЗ увеличивается в 2.44 раза

desaturations and alterations in blood pressure and cerebral blood flow [11]. Therefore, OSA has been implicated as an independent risk factor for CV disease [12, 13]. Multiple studies have demonstrated that the prevalence of OSA within the general population is 3–7% [5, 14], but the prevalence is projected to rise to 30–70% in people who have CV disease [15]. People diagnosed by apnea-hypopnea index (AHI) with mild OSA ($5 \leq \text{AHI} < 15$) carry a 2.44-fold greater risk of cerebrovascular events, whereas moderate or severe OSA ($\text{AHI} \geq 15$) carries a 3.56-fold greater risk compared to people with a normal AHI [16].

Many studies have sought to demonstrate whether OSA independently the incidence of CV disease incidences, or whether this relationship is confounded by the population's prevalent cardiovascular risk factors. The latest published meta-analysis of 10 prospective cohort studies found that OSA was significantly associated with the risk of fatal or non-fatal stroke (RR 2.10; 95% CI, 1.50–2.93) [17]. However, that meta-analysis did not explore the frequency of OSA in CV disease patients at the same time.



Риск смертельного или
несмертельного инсульта
увеличивается **более чем в 2 раза**
при обструктивных сонных апноэ

Abstract

Background There is increasing evidence that there is a direct relationship between obstructive sleep apnea (OSA) and cerebrovascular (CV) disease. This meta-analysis includes prospective cohorts and cross-sectional studies. It determines the prevalence of OSA among patients with CV disease and also looks for the **risk** of cerebrovascular events among patients with OSA.

Method We conducted a computerized literature search in the databases of Medline, Embase, Wanfang, CNKI, Wiley Online Library, and CINAHL (date till April 2017). The random effects model was used to pool the hazard ratio (HR) and effect sizes (ES). Heterogeneity, subgroup, sensitivity analyses, and publication bias were performed.

Result Fifty-eight studies involving 3 million patients/participants were included. The pooled HR of 15 prospective cohort studies indicated a significant association between OSA and the risk of CV disease after adjustment confounding factors (HR 1.94; 95% CI 1.31–2.89; $P = 0.001$), and OSA is present in up to 58.8% of patients with CV disease after pooling the remaining 43 studies.

Conclusions OSA is very common in patients with CV disease. Similarly, patients with OSA are prone to have CV disease.

Заклучение: Обструктивные сонные апноэ (ОСА) очень распространены среди пациентов с ЦВЗ.

Пациенты с ОАС предрасположены к ЦВЗ

Результаты: В мета-анализ 58 исследований, включающих 3 млн пациентов. Значимая ассоциация между ОСА и ЦВЗ (**HR=1.94**, 95% ДИ 1.31-2.89, $P=0.001$) в 15 проспективных когортных исследованиях. Распространенность ОСА среди пациентов с ЦВЗ (остальные 43 исследования) –

58.8%



Включенные в мета-анализ проспективные исследования

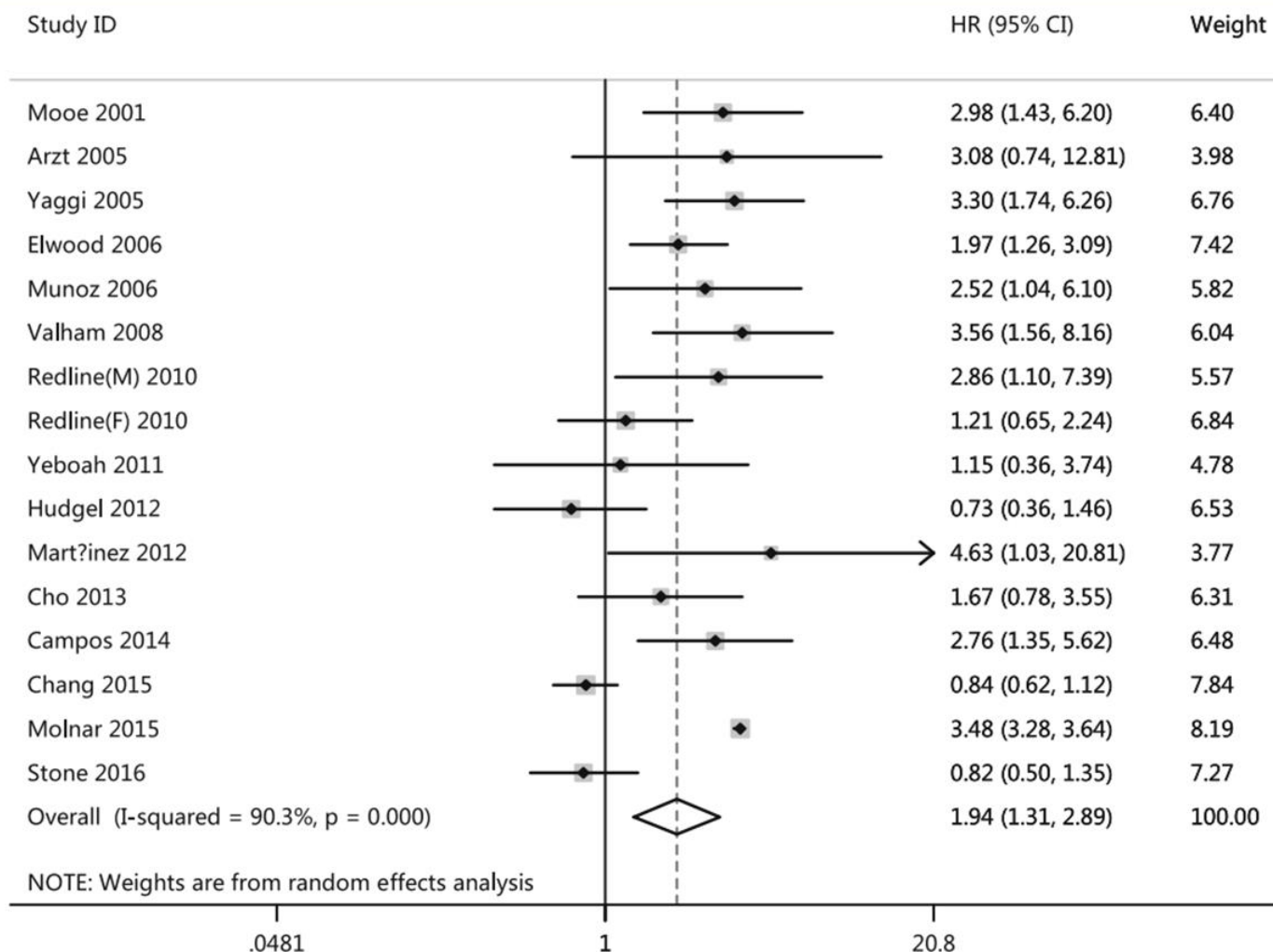
Table 1 Characteristics of included prospective cohort studies

Name	Year	Country	Disease type	Design	OSA assessment	Case (n)	Male n(%)	Age range (year)	Mean BMI (kg/m ²)
Moore	2001	Sweden	CV	Hospital-based	PSG	407	277(68.1)	≤ 70	–
Arzt	2005	Canadian	Stroke	Population-based	PSG	1475	809(54.8)	30–60	30
Yaggi	2005	USA	Stroke	Hospital-based	PSG	1022	729(71.3)	≥ 50	33.8
Elwood	2006	UK	Stroke	Population-based	Self-reports	1986	1986(100)	55–69	26.8
Munoz	2006	Spain	Stroke	Population-based	PSG	394	225(57.1)	70–90	28.9
Valham	2008	Sweden	Stroke	Hospital-based	PSG	392	263(67)	≤ 70	27
Redline	2010	USA	Stroke	Community-based	PSG	5422	2462(45.4)	≥ 40	28
Yeboah	2011	USA	Stroke	Community-based	PDSA/self-reports	5338	2643(49.5)	45–84	29.8
Hudgel	2012	USA	CVA	Hospital-based	PSG	1519	948(62.4)	≥ 18	36.8
Martinez	2012	Spain	Stroke	Hospital-based	PSG	939	601(64)	≥ 65	35.1
Cho	2013	Korean	SCI, stroke	Population-based	PSG	746	252(33.8)	50–79	24.7
Campos	2014	Spain	Stroke	Hospital-based	PSG/RP	967	0(0%)	43–66	–
Chang	2015	China	Stroke	Hospital-based	Self-reports	17,375	9728(56)	71 ± 13	–
Molnar	2015	USA	Stroke	Hospital-based	PSG	3,079,514	2,863,045(93)	60.5 ± 14.4	28.3
Stone	2016	USA	Stroke	Community-based	PSG	2872	2872(100)	≥ 65	27.2

OSA obstructive sleep apnea; BMI body mass index; CV cerebrovascular events; CVA cerebral vascular accident; SCI silent cerebral infarction; PDSA physician-diagnosed sleep apnea; RP respiratory polygraphy; PSG polysomnogram

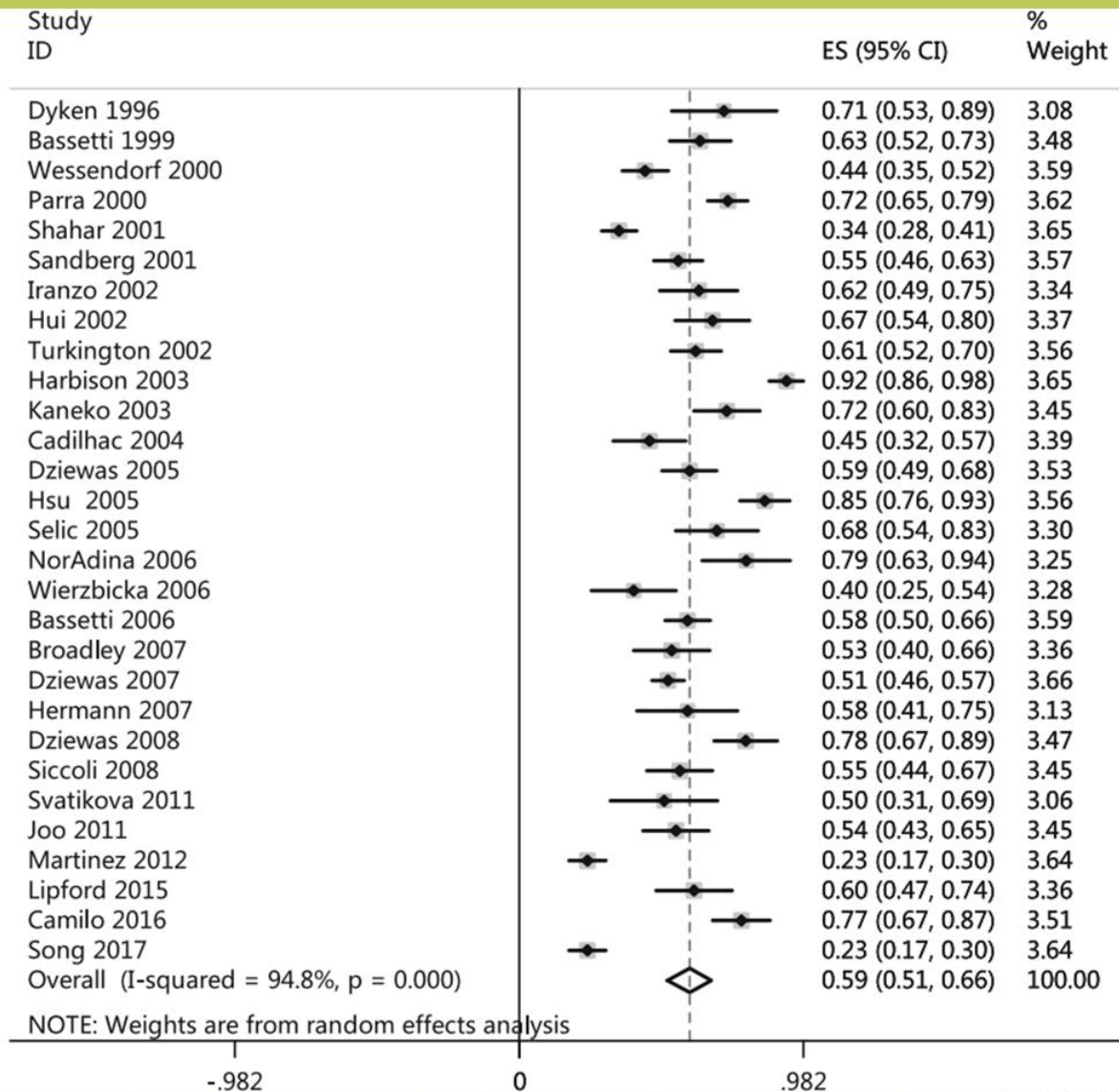
Взаимоотношения между обструктивными сонными апноэ и риском ЦВЗ

Fig. 2 Relationship between
OSA and risk of CV disease



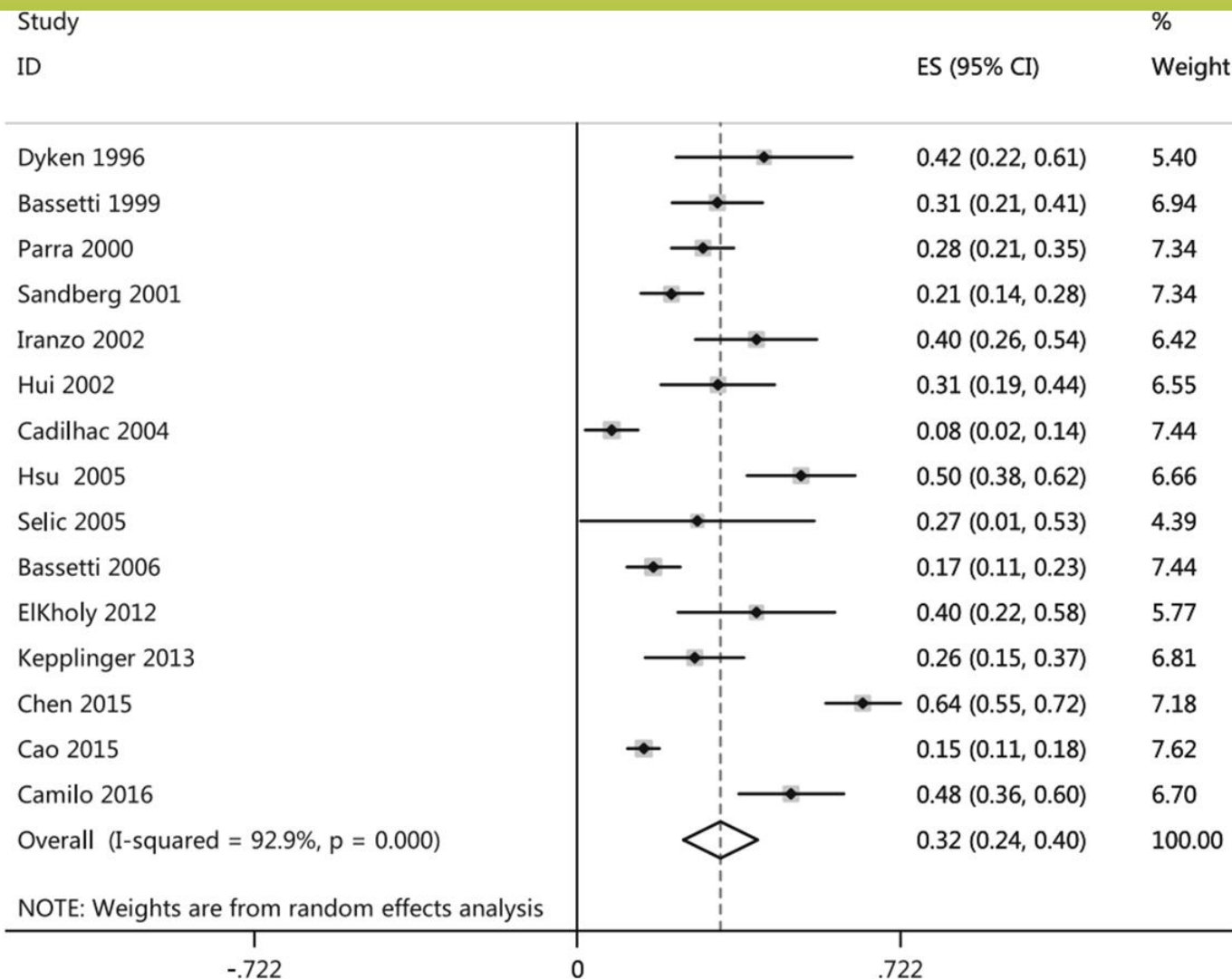
Распространенность обструктивных сонных апноэ (индекс апноэ-гипопноэ >10)

Fig. 4 Prevalence of OSA
(AHI > 10)



Распространенность *тяжелых* обструктивных сонных апноэ (индекс апноэ-гипопноэ >30)

Fig. 5 Prevalence of severe OSA
(AHI > 30)





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