



Session: regenerative medicine: autologous treatment

**PRESIDENT OF THE KAZAKHSTAN
ASSOCIATION OF
DERMATOVENEREOLOGISTS AND
DERMATOCOSMETOLOGISTS,
HONORED SCIENTIST OF THE REPUBLIC OF
KAZAKHSTAN, MD, PROFESSOR
BATPENOVA GULNAR**

Kazakhstan Association of dermatovenereologists and dermatocosmetologists



Date of Creation: April 2012



Purpose of creation: unification and coordination of the Association members' activities, representation and protection of their professional rights and legal interests



Today in the ranks of KADD there are more than 300 dermatologists and dermatocosmetologists from all regions of the Republic

Awarding of the elite honor marks from the National Business Rating

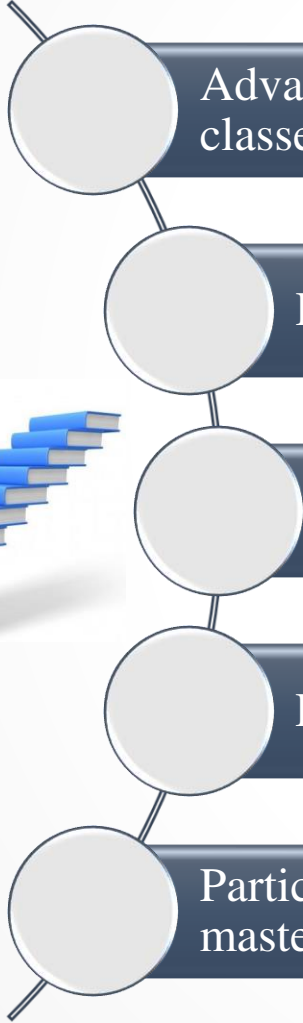
According to the results of the statistical ranking, conducted by the "General Classification of Economic Activities"

Kazakhstan Association of dermatologists, dermatocosmetologists entered the **TOP 30** among enterprises of the Republic of Kazakhstan with the title **"Industry Leader 2014"**





The priority activity of KADD – to increase the professional level of specialists



Advanced training courses, improvements and master classes in Astana and other regions of Kazakhstan

Regional and Republican Conferences

Eurasian Congress of Dermatovenereology,
Cosmetology and Aesthetic Medicine

Full / partial funding of overseas internships

Participation in international congresses, symposia,
master classes and other events.



KADD initiated the open door days in the Republic of Kazakhstan to raise public awareness about the treatment and prevention of skin diseases



October 29 - Psoriasis Day is held on the initiative of the International Federation of Psoriasis Patient Associations



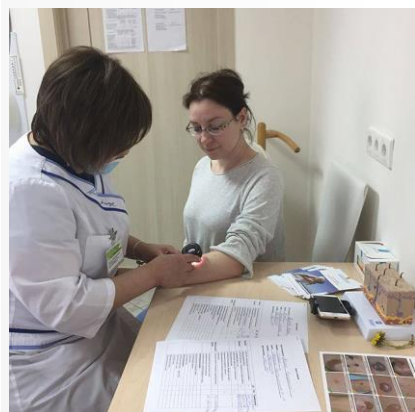
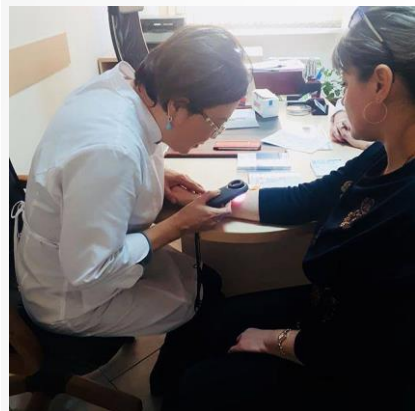
June 25 - World Vitiligo Day



May 15 - World Melanoma Day



February 28 - Day of orphan diseases



Since 2017, under the auspices of KADD, the first fund of helping children with epidermolysis bullosa – “Butterflies Children of Kazakhstan” – has started its work.



1 year of activity:

- ☐ Provision of patients with specialized dressings from local budget became available in 12 regions of Kazakhstan
- ☐ More than 150 dermatologists, pediatricians, geneticists, as well as nurses from all regions of Kazakhstan were trained
- ☐ Developed and implemented a roadmap for treating children with orphan diseases.
- ☐ Organized targeted assistance for patients in the regions



KADD' international partners



IMCAS ANNUAL WORLD CONGRESS 21st Edition
JANUARY 31 TO FEBRUARY 2, 2019

PRP TO TREAT HAIR DISORDERS - MYTH AND REALITY?

G. Batpenova, MD, professor
«Astana Medical University»
Kazakhstan, Astana

PRP-therapy in Kazakhstan

By the efforts of the Association, today PRP technology is successfully used in regenerative medicine.



AUTOLOGOUS MATERIALS USED IN REGENERATIVE MEDICINE

- ✓ *PRP/PRF*
- ✓ *Autologous skin, fat*
- ✓ *Vascular stromal fraction*
- ✓ *Fibroblasts*
- ✓ *Hair follicles*



Using of the autologous materials circumvents the problem of infections transmission and the development of immune rejection reactions.

TRICHOLOGY PROBLEMS

ORIGINAL ARTICLE

Guidelines for management of androgenetic alopecia based on BASP classification—the Asian consensus committee guideline

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Abstract

Background Androgenetic alopecia (AGA), or pattern hair loss, is a common disorder in both Asian men and women. There are several guidelines for the treatment of AGA which are suitable for Caucasian patients; however, each of these has some limitations. Furthermore, in comparison with Caucasian patients, Asian patients with AGA have different types of hair loss and family histories which may alter the treatment response. There is currently no published AGA guideline for Asian patients.

Objectives The Asian Consensus Committee for Androgenetic Alopecia aimed to develop an algorithmic guideline, based on the basic and specific (BASP) classification, for the treatment of AGA especially in Asian patients.

Methods The committee collaborated extensively on reviewing available literature on AGA treatment in order to formulate an algorithmic guideline on AGA management.

Results Previously published guidelines based on pre-existing classifications of AGA cannot easily classify the patterns of AGA that are more frequently seen in Asians. The BASP classification not only facilitates the development of a unified and simplified algorithm, but also overcomes the disadvantages of previously reported classification systems.

Conclusions The proposed treatment guideline for AGA based on the BASP classification may be useful for dermatologists in their approach to treating Asian patients with AGA in clinical practice. Ideally, clinicians should try to utilize this guideline consistently in their practice to monitor treatment response with the goal of enhancing successful outcomes. This will help boost patients' confidence and self-esteem, thus improving patients' compliance with the prescribed treatments.

Received: 5 June 2012; Accepted: 9 October 2012

Conflict of Interest

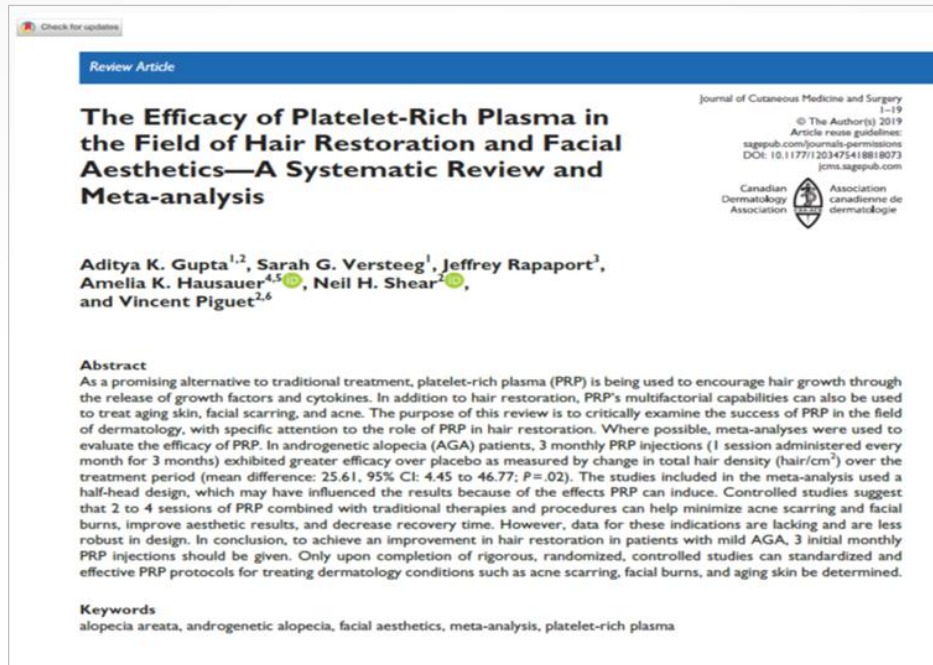
None of the committee members has any financial interest in any of the companies whose products are discussed here.

- The range of drugs and treatments that can be offered to patients suffering from chronic hair loss is limited.
- To ensure sustainable hair regrowth, continuous treatment is necessary.
- Treatment of androgenic alopecia will not restore hair growth to their prepubertal density.
- The main goal of therapy is to prevent further progression of hair loss, to improve the patient's quality of life.

Existing myths about PRP



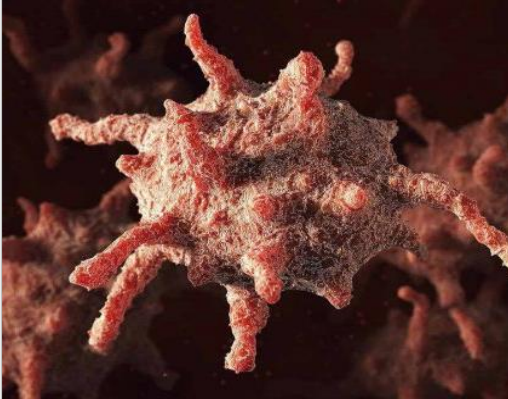
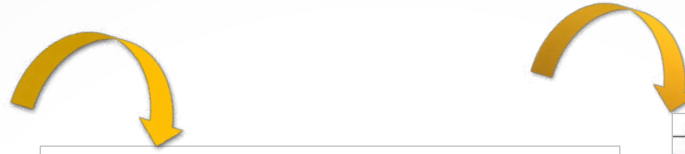
- **Myth 1:** *PRP is not effective for hair loss.*
- **Myth 2:** *PRP is effective in any type of hair loss.*
- **Myth 3:** *PRP monotherapy replaces all other treatments.*
- **Myth 4:** *Achievement of 100% result after one course of PRP.*



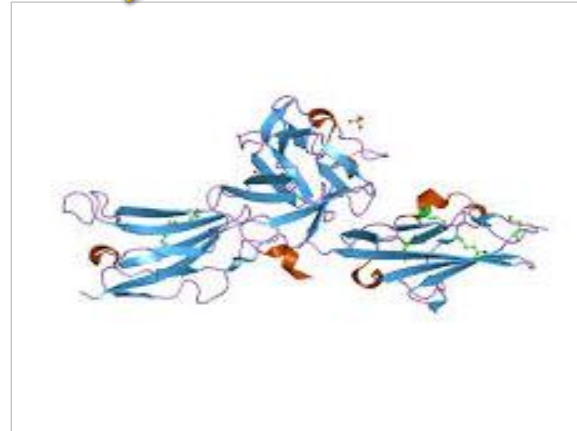
Why did the myths about PRP come about?

- The lack of uniform clinical protocols and indications for the PRP procedure (selection criteria, multiplicity, interval, depth of administration, etc.).
- Many technical parameters of the procedure may affect the effectiveness of PRP (equipment, receiving mode of plasma enriched with platelets, etc.).
- Limited number of randomized trials

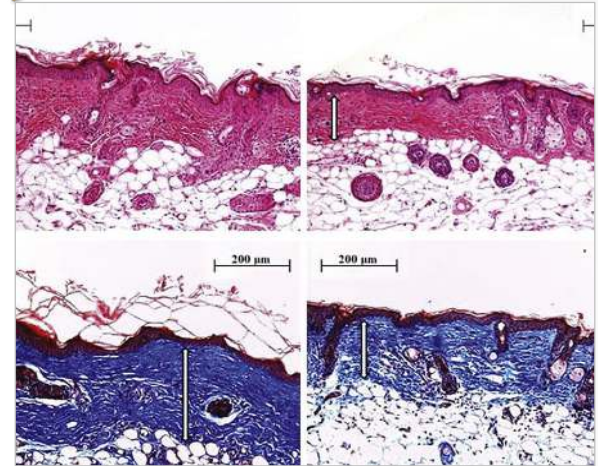
PRP REALITY



Platelet



Fibroblast Growth Factors,
Vascular Endothelial Growth
Factors,
Insulin-like growth factor,
Thrombocyte growth factor,
Nerve growth factor,
Keratinocyte growth factor



Regeneration of the dermis, hair
follicle, bone and cartilage
structures,
Formation of the extracellular
matrix
Angiogenesis

The purpose of PRP therapy: the receipt and delivery of growth factors for the regeneration of soft and bone tissue, hair follicles.

The advantages of PRP compared to other autologous products:

Efficiency Safety Simplicity

WHY PRP IS EFFECTIVE IN HAIR PATHOLOGY?

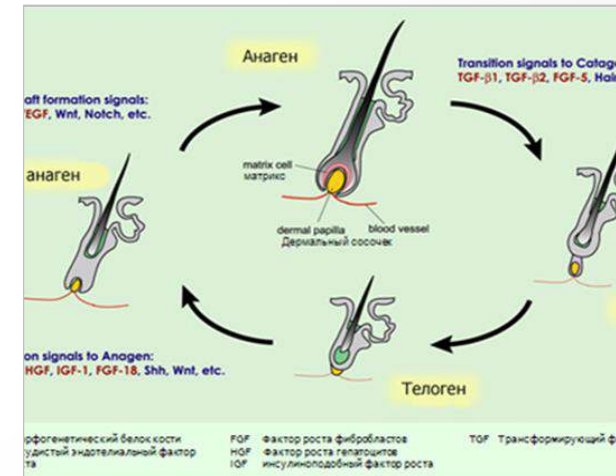
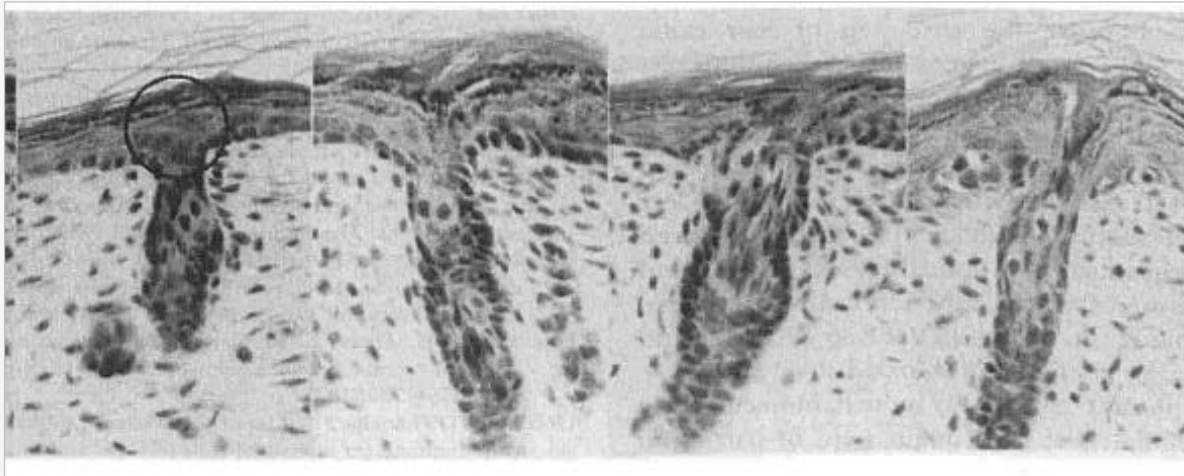
Involvement of Platelet-Derived Growth Factor Receptor- α in Hair Canal Formation

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Department of Molecular Genetics, Faculty of Medicine, Kyoto University, Kyoto; and *Department of Immunology, Faculty of Medicine, Tottori University, Tottori, Japan

Hair follicles develop and are maintained by multiple rounds of inductive events involving interactions among various cell types within the follicles and the adjacent mesenchyme. Although evidence suggests that several growth factors, cell adhesion molecules, and transcriptional regulators are involved in those cell-cell interactions, the molecular mechanisms regulating each pivotal step of hair follicle development, such as formation of the hair germ, root sheath, sebaceous gland, and hair canal, remain largely unknown. In this study, we established the antagonistic monoclonal antibody APA5 against platelet-derived growth factor (PDGF) receptor- α (PDGFR- α) and used it to investigate the role of PDGFR- α in neonatal skin development. In addition to the dermal mesenchyme, a known site of PDGFR- α expression, immunohistologic staining of neonatal skin detected transient expression of PDGFR- α in the perinatal

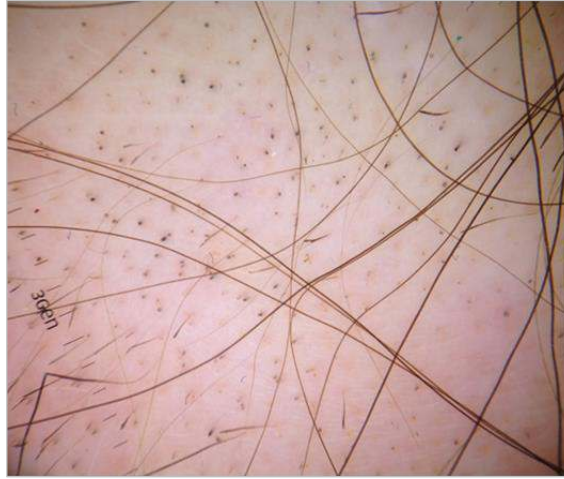
epidermis for several days. On the other hand, ligands for PDGFR- α were detected in epithelial cells and sebaceous glands of hair follicles. To determine whether this contiguous expression of PDGF and PDGFR- α in neonatal skin plays a functional role, we injected APA5 into neonates to block the function of PDGFR- α . Consistent with the PDGF/PDGFR- α expression in the neonatal skin, two defects were induced by this procedure. First, hair canal formation in the epidermis was severely suppressed. Second, the growth of dermal connective tissues and of hair follicles of pelage hairs was suppressed. These results indicate that PDGF signals are involved in both the epidermis-follicle interaction and the dermal mesenchyme-follicle interaction required for hair canal formation and the growth of the dermal mesenchyme, respectively. **Key words:** PDGFR- α /hair follicle/APA5. *J Invest Dermatol* 107:770-777, 1996

During periods of embryogenesis and neonatality, platelet-derived growth factors (PDGF) are mandatory cytokines involved in the formation of the hair channel, hair follicles and the growth of the dermal mesenchyme



ANALYSIS OF USING PRP THERAPY IN NON-SCAR ALOPECIA: ANDROGENIC, DIFFUSE AND AREATA 2010 - 2019

Study design



Clinical groups:

Total 187 patients

- Androgenic Alopecia:
112 (M / F: 72/40)
- Alopecia areata:
48 (M / F: 19/27)
- Diffuse alopecia:
17 (F 17)


Diagnostics

- Clinical and trichoscopic diagnostics, photo documentation
- Laboratory diagnosis of hormonal and metabolic status

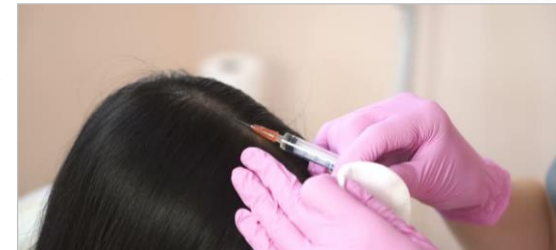
Therapy protocol

- PRP-therapy as part of complex or monotherapy
- Control trichoscopy monthly and photocontrol after 6 and 12 months

PRP procedure protocol

PRP was prepared using  "Tropocells" in the Republic of Kazakhstan). One tube provides 2.0 ml of PRP from 11.0 ml of whole blood. One procedure requires from 2.0 ml to 6.0 ml of platelet-rich plasma.

Stage 1 - nappage technique throughout the area of sparse hair with an interval of 3-4 mm, at a depth of 0.5-2.0 mm; 13 mm needle, 30G or mezoroller.



Stage 2 - micro papular technique - as an additional technique in areas of pronounced hair loss, 13 mm needle, 30G



Results of PRP-therapy:

Male, 59 years old, Diagnosis: Androgenetic Alopecia,
3 procedures (once a month)

November 2016,
before the start of treatment
Stage of alopecia on the Norwood-
Hamilton scale - V



February 2017, after 3 PRP procedures, with
an interval of 1 time per month,
Transition to stage IV on the Norwood –
Hamilton scale
Increased thickness and darkening of the
hair, reducing the area of sparse hair



Results of PRP-therapy:

Patient 33 years old, diagnosis: Androgenic alopecia,
4 procedures (1 time per month)

March 2017, before the start of treatment,
Stage II baldness on the Ludwig scale



September 2017, after 6 months.,
doubling the hair shafts from a single hair
follicle, the disappearance of the “gaping
crater-shaped” mouths of the funnel of the
follicle, the thickening of the shaft and the
increase in the thickness of the hair, the
transition to Stage I baldness on the Ludwig
scale



RESULTS OF PRP-THERAPY: PATIENT 27 YEARS OLD, DIAGNOSIS: ALOPECIA AREATA 4 PRP PROCEDURES



10.02.12
before treatment



10.06.12
after 3 procedures



22.08.12
after 4 procedures

Сегодня аутологичную, богатую тромбоцитами плазму, широко применяют реконструктивных операциях в челюстно-лицевой хирургии, ортопедии, спортивной медицине, оториноларингологии, нейрохирургии, офтальмологии, урологии, заболеваниях кожи. Исследования показали, что использование богатой тромбоцитами плазмы (БТП) в послеоперационном периоде уменьшает воспаление, инфицирование и повышает количество клеток, нарастающих в области остеогенеза и заживления мягких тканей. В настоящее время в мире набирает популярность «blood rich» — технология обогащения плазмы тромбоцитами.

В последние годы все шире применяются в клинической гематологии. Этот метод применяют, чтобы свести к минимуму нежелательное уменьшение морфологии эритроцитов при переливании Ресусуле. Как и при переливании РРР. За этот полезный курс прошли более 1000 пациентов. Этот метод имеет многолетний опыт и практический материал.

Общая наша практика применения РРР — это о комплексной терапии, которая включает постановку диагноза, лечение, мониторинг, профилактику осложнений, терапию, анемическая алоpecia, онкологическая алоpecia, а также в много-этапной в комплексной терапии, реабилитация стрессовых пациентов.

Применение является вопрос технических методов приготовления плазмы, обогащенной тромбоцитами, поэтому что именно количество тромбоцитов является фактором эффективности. Поэтому, количество тромбоцитов является фактором эффективности. Поэтому, количество тромбоцитов является фактором эффективности.

To date the selection of techniques prevented aging with minimal side effects is important. One is those methods is PRP - Therapy (*Platelet Rich Plasma*) or plasma-treatment, *plasmalift*.

PRP is a proprietary patient's plasma, in which concentration of platelets is higher than normal. Scientifically proven that PRP treatment effect is shown, if the concentration of platelets in it reaches 1mln/mkl (*in normal plasma - 200 thousand/ml*). However, not all systems for autologous plasma have confirmation of that. Confirming the presence of megakaryocytes

2012

- PRP therapy is effective for both: androgenetic alopecia and alopecia areata.
- PRP therapy contributes to the doubling of hair rods in a single hair follicle.
- PRP therapy promotes thickening of the hair shaft in a single hair follicle.
- The result of PRP therapy: the transition from a more severe stage of alopecia to an easier

International Journal of Trichology, 2015

- Growing hair has a larger diameter compared to the control group.
 - The increase in the number of hair in 1 sq. Cm.
- PRIME, March 2015**
- PRP Therapy Stimulates Live Follicles
 - New hair growth is observed, but not the formation of a new follicle, new follicles are not produced

PRIME, March 2015

- PRP Therapy Stimulates Live Follicles
- New hair growth is observed, but not the formation of a new follicle, new follicles are not produced

EADV, 2018

- Increase hair density by 1cm²

CONCLUSIONS



MYTHS

- **Myth 1:** *PRP is not effective for hair loss.*
- **Myth 2:** *PRP is effective in all forms of hair loss.*
- **Myth 3:** *PRP monotherapy replaces all other treatments.*
- **Myth 4:** *Achievement of 100% result after one PRP procedure.*



REALITY

- PRP therapy is effective in androgenetic and areata alopecia in women and men.
- PRP therapy is not effective in the diffuse form of alopecia.
- PRP therapy is compatible with other therapeutic techniques and technologies.
- To achieve the result, a course of PRP therapy is required.



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May 30-31 2019

**Astana, Kazakhstan,
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Official website:

<http://congress.com.kz>



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Thanks for attention!