

# PHARMACOLOGY IN PEACE AND WAR TIMES

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This issue of *PharmAdvances* features a word that many of us repeat quite often: “stress”. Dr. Brivio (who, with this paper, competes for the SIF/PharmAdvances PhD thesis award) clearly states that we do not know much about stress and that it is crucial to better understand the behavioral outcomes of stressful events as well as the molecular changes that may sustain them for the discovery of novel therapeutic targets and approaches to treat stress-related disorders and to promote resilience (1). Thanks to her and others’ research we might better manage this condition that affects so many of us (1). Speaking of the SIF/PharmAdvances PhD thesis award, Dr. Lazzara (2) reviews the etiopathogenesis of diabetic retinopathy, addressing several hypotheses, trying to identify and validate novel and promising pathways implicated in this pathology that afflicts so many patients and causes irreversible vision loss.

In addition to stress (which is yet poorly defined), many of us often feel pain, which increases with age and that must be controlled by pharmacological means. Of all kinds of pain, neuropathic pain is a relevant clinical problem worldwide, and current therapeutic tools are unsatisfactory. The identification of novel therapeutic targets and the development of new pharmacological approaches remain a priority. Amodeo *et al.* (3) review the bases of neuropathic pain and state that the availability of specific receptor antagonists makes the prokineticin system a very interesting one to pharmacologically control prokineticin activity (3). We hope that future studies will finally nail the biochemistry behind prokineticin and pave the way to novel therapeutics.

In keeping with the above, Rullo *et al.* (4) review the pharmacological outcomes of opioids biased ligands by bringing together cellular results and the available data from clinical trials (4). Of note, the authors focus on biased  $\mu$ -opioid receptor agonists given their therapeutic relevance. This is another example of the importance of basic research, to identify targets

for pharmacological interventions that should be as specific as possible to minimize side effects.

Therapy (= health care in general) is costly and this important issue is addressed in a paper coordinated by Professors Pani and Racagni (5). Where free healthcare is available to everyone, someone has to bear the costs of examining and treating patients. To optimize costs and reduce the tax burden on citizens, the experts started from analyzing the evidence on the positive impact of value-based differential prices on innovation and access to innovative medicines, then discussed and defined the specific features of payment models that could be implemented in the Italian context. Their conclusion is that it is essential to assess the value over the entire life cycle of drugs per every single indication, systematically collecting real-world evidence data to re-negotiate the value as these data are generated (5). Hopefully, the Italian scenario will be integrated into a broader one to give us a feeling of how future healthcare policies should be drafted.

We also feature two papers stemming from the recent "1st Joint Meeting on Natural Products Pharmacology SIF-SIPHAR-IMGNPP", held in Naples (Italy) in February 2022 and very well attended. Noé *et al.* (6) and Kamin *et al.* (7) provide interesting examples of how a well-developed and characterized improve gastrointestinal symptoms and dyspepsia of irritable bowel syndrome patients (the former) and reduce sore throat symptoms (the latter). These two are clear examples of how natural products should be investigated and exploited "the pharmacological way", *i.e.* by applying the same approach we use for allopathic medicine. The *IUPHAR Mediterranean Group of Natural Products Pharmacology* (<https://www.imgnpp.org/about-us>) collates many pharmacologists with interests in this and can only pledge with the contribution of the entire pharmacological community. In this respect, stay tuned for future publications and please contribute your own ones. The IMGNPP is taking the lead and will help you disseminate your findings in an international framework.

To add some final remarks, this issue of PharmAdvances is being produced during a war that nobody believed would be taking place again. Science in general, and pharmacology as integral part of it, have no borders, no nationality, no "backyards". Data should be free to circulate and this is exactly why we publish in PharmAdvances and in other scientific journals. Nearly all of us have worked abroad and/or hosted foreign investigators in our labs. Everyone contributes with its peculiarity and ethnic background, creating the magic mix that advances our knowledge and the well-being of humankind. As it is not acceptable to fight over scientific data that must benefit everyone, it is likewise not acceptable to kill human beings for purported national interests. PharmAdvances calls for peace in Ukraine and worldwide. Rather than spending money to kill each other, humans should invest resources in research, be it basic, applied, technological, *etc.* The current SARS-CoV-2 disaster is a reminder of how much progress is yet to be made and of how each and every one of us could and should contribute to the advancement of pharmacology.

## REFERENCES

1. Brivio P. The multifaceted aspects of stress. *Pharmadvances*. 2022;4(2):121-9. doi: 10.36118/pharmadvances.2022.31.
2. F. Lazzara. Diabetic retinopathy: new pharmacological targets, *Pharmadvances* 2022;4(2):143-62. doi: 10.36118/pharmadvances.2022.27.
3. Amodeo G, Maftai D, Lattanzi R, Verduci B, Comi L, Galimberti G, et al. Controlling the activation of the prokineticin system as therapeutic approach to relief neuropathic pain and reduce neuroinflammation. *Pharmadvances*. 2022;4(2):104-20. doi: 10.36118/pharmadvances.2022.30.
4. Rullo L, Losapio MP, Morosini C, Candeletti S, Romualdi P. New pharmacological strategies for analgesic drug development: focus on biased  $\mu$ -opioid receptor agonists. *Pharmadvances*. 2022;4(2):130-42. doi: 10.36118/pharmadvances.2022.29.
5. Pani L, Cicchetti A, De Luca A, Mennini FS, Mini E, Nocentini G, et al. Pricing for multi-indication medicines: a discussion with Italian experts. *Pharmadvances*. 2022;4(2):163-70. doi: 10.36118/pharmadvances.2022.28.
6. Noé S, Malek FA, Stracke B, Funk P, Madisch A. Menthacarin in functional gastrointestinal disorders: a pharmacy-based cohort study. *Pharmadvances*. 2022;4(2):78-87. doi: 10.36118/pharmadvances.2022.32.
7. Kamin W, Lechmacher W, Zimmermann A, Brandes-Schramm J, Funk P, Kardos P. Treatment of sore throat and hoarseness with *Pelargonium sidoides* 6 extract EPs 7630: a meta-analysis. *Pharmadvances*. 2022;4(2):88-103. doi: 10.36118/pharmadvances.2022.33.