INTRODUCTION

Attention Deficit and Hyperactivity Disorder (ADHD) is a neurodevelopment disorder with child-onset, characterized by inattention, hyperactivity, and impulsivity. Several of the individual’s ADHD symptoms must be present prior to age 12 and lead to functional impairment on multiple levels of life (family, social, academic, and working life) [1]. The predominance of symptoms varies among individuals and at the same time in the same individual, giving rise to 3 different configurations of the disease:

• predominantly inattentive;
• predominantly hyperactive-impulsive; or
• with a mixed clinical presentation of the two domains [1,2].

The prevalence of ADHD in the general adult population is about 2.8%, ranging from 0.6% to 7.3% [3].

CLINICAL FEATURES

The heterogeneity of clinical presentations depends on the various symptoms frequently observed in clinical practice and the high rate of psychiatric comorbidities. Therefore, in addition to the core symptoms, there are often other symptoms such as restlessness, talkativeness, inability to relax, excessive agitation, impatience, irritability, sensation-seeking behaviors, disorganization, distractibility, difficulty in decision making, hyper-sensitivity to stress, emotional dysregulation, feelings of internal tension, etc. These symptoms may deeply affect the quality of life and sometimes lead to dangerous life habits such as smoking, alcohol and drug abuse, risky sexual behavior, and altered sleep patterns [2,4].

The clinical pictures observed can be different from each other and they tend to change, thus adults with ADHD often complain about different symptoms [5].

In the adult population, ADHD is frequently associated with comorbid psychiatric diseases and many studies report the presence of ADHD in subjects with at least one psychiatric disorder. The most common conditions associated with ADHD are depressive and bipolar disorder, anxiety, substance use, and personality disorders. The percentages of patients with ADHD and bipolar disorder in comorbidity have been estimated in a range between 5.1% and 47.1%, with a higher prevalence for bipolar I than bipolar II disorder [5,6]. Prevalence rates of depression in patients with major depression and comorbid ADHD range from 18.6% to 53.3%, with a lower self-reported quality of life compared to patients with major depressive disorder alone [7]. The risk of anxiety disorder is higher in people with ADHD than in the general population, with rates close to 50% and ADHD is more prevalent in social
phobia than panic disorder [8]. Substance use disorder (SUD) is twice as common in individuals with ADHD compared to the general population, particularly in the use of alcohol, nicotine, cannabis, and cocaine [9]. These people often report using substances to manage their mood and sleep. Personality disorders, mainly clusters B and C, are present in more than 50% of adults with ADHD, leading to increased impairment and decreased response to treatment [5].

The overlapping of symptoms between ADHD and comorbid psychopathologies in the past has meant that people with ADHD were not recognized and the neglect of underlying psychopathological picture lead to an easier chronicization of symptoms with earlier onset and more severe comorbid conditions.

There is evidence of a positive association between ADHD and risk of suicide, especially in female patients. For example, a large population study based on Swedish registries revealed a higher increase in women than men in the risk of suicide attempts in ADHD patients compared to corresponding controls in the general population [10].

The presence of psychiatric comorbidities could be an additional risk factor for suicide in ADHD patients. In a sample-study based on long-term outcomes of ADHD patients compared to the general population, Barbaresi et al. found that the ADHD group had significantly higher suicide rates than controls [11].

Additionally, the mortality risk is higher when the disorder is undiagnosed, thus an early diagnosis could be an essential factor in decreasing mortality rates in the ADHD population.

**TREATMENT**

Undoubtedly, it is of the utmost importance to diagnose and treat this disorder in adults [12]. Nevertheless, there is still a lack of psychiatric services with specific expertise in adult assessment and treatment of ADHD in Italy.

The only drug available in public services, based on scientific evidence, is atomoxetine, while the only drug available of the class of psychostimulants, methylphenidate, is still off-label for adults. Furthermore, there are only few centers prescribing these drugs to patients who receive a diagnosis as adults. This is in contrast to European guidelines, which indicate amphetamines and methylphenidate as the first choice among drug treatments, in different release formulations, and atomoxetine as the second choice treatment [13].

The European guidelines also highlight the importance of a multimodal approach in treatment of ADHD, including psychological interventions such as: psychoeducation, cognitive behavioral therapy, psychosocial interventions. In particular, a recent study has highlighted how cognitive behavioral therapy, combined with pharmacological treatment, is more effective than pharmacotherapy alone in reducing the amount and intensity of ADHD symptoms in the adult population [14].

**CONCLUSION**

Due to the proven clinical consequences and the individual burden related to the failure of diagnosis, and the scientific evidence proving the effectiveness as well as the safety of drugs still off-label for the treatment of the disorder, it is essential to raise the knowledge about of ADHD in adults among health care professionals. The aim is to increase the number of specialized psychiatric services in which clinicians with specific training and expertise in the assessment and treatment of ADHD enable faster diagnosis and implement effective treatment.

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**Conflict of Interest**

The authors declare they have no competing financial interest concerning the topics of this article.
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