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Invalid Drug Promotion in COVID-19: evaluation of the Economic Impact on Hydroxychloroquine Out-of-Hospital Reimbursements in France

8- Bon usage du médicament

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Introduction: Hydroxychloroquine (HCQ) was widely promoted as a potential treatment for COVID-19 during the early stages of the pandemic, despite the lack of valid evidence. This mispromotion led to an extensive off-label use. We evaluated the financial impact of this mispromotion on HCQ reimbursements in France.

Material and methods: We analyzed out-of-hospital drug reimbursement data from the SNDS Medic'Am open database, which comprehensively covers all reimbursements in France. An interrupted time series analysis using ARIMA models was conducted to assess changes in HCQ reimbursements, with February 2020 as the interruption point. Data from January 2015 to January 2020 constituted the pre-interruption period, while February 2020 to February 2022 formed the post-interruption period. Changes in reimbursement levels and trends were analyzed, and HCQ reimbursements excess were estimated. TNF-alpha inhibitors were used as a negative control, serving as a reference for changes in reimbursements over the period for antirheumatic drugs unaffected by mispromotion as a COVID-19 treatment.

Results: Monthly HCQ reimbursements showed a significant level increase in the post-interruption period (mean level: €409,460.1; 95%CI: €390,744.2–€428,176) compared to the pre-interruption period (€364,860.5; 95%CI: €358,695.5–

€371,025.6). In contrast, no significant changes were observed for TNF-alpha inhibitors. HCQ reimbursement excess was estimated at over €1 million (range: €470,000–€1,700,000) during 2020–2022, with total reimbursements exceeding €9.8 million—approximately 12% higher than expected (€8.75 million). Changes in reimbursement trends were not interpretable.

Discussion / Conclusion: The promotion of HCQ for COVID-19 resulted in substantial increases in HCQ reimbursement costs, with financial impact that could have exceeded €1 million for this only drug and period—an amount equivalent to the funding required for 20 full-time hospital nurse positions for one year. This estimate does not encompass the overall financial impact of drug mispromotion in COVID-19, which should also account at least for other promoted drugs (e.g., azithromycin, ivermectin, zinc, vitamins), and indirect costs related to associated adverse effects.

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