

Unknown diabetes: a case report

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SUMMARY

Introduction: *Diabetes is often diagnosed in people who already show clear signs and symptoms of complications. This leads to a significant impact both on general health costs and quality of life (private and working). Corporate social responsibility actions could play a significant role managing and supporting physical, mental and social well-being of the worker affected by diabetes.* **Objectives:** *To report a case of management of unknown diabetes.* **Results:** *Type 2 Diabetes in an office worker (health risks: VDU, organization and stress, use of company car), with sudden visual impairment, detected during a health surveillance periodical consult. The diagnosis was "diabetes mellitus with proliferative retinopathy, macular edema and predominantly sensitive polyneuropathy".* **Discussion:** *The most important impairment concerned the distance visual acuity, with the consequent impossibility to drive a car. The worker continued to work in the same advanced tertiary sector company adapting to the new condition of susceptibility (transition from customer directed operations to manager of working groups, limited VDU use, and no company car use). The depressive implications, caused by the impacts in lifestyle, have been effectively counterbalanced by the strong social support received from the work organization and colleagues.* **Conclusions:** *A constructive reaction of the "company system" is able to provide an useful and effective support to manage diabetes and work, with tangible positive implications on overall health status.*

RIASSUNTO

«**Diabete misconosciuto: caso clinico**». **Introduzione:** *La diagnosi di diabete è spesso posta in persone che mostrano già chiari segni e sintomi di complicanze. Ciò comporta un rilevante impatto sui costi sanitari generali nonché sulla qualità della vita personale (privata e lavorativa). Interventi nell'ambito della responsabilità sociale delle imprese possono svolgere un ruolo significativo anche nella gestione integrata del sostegno al benessere fisico, mentale e sociale del lavoratore affetto da questa malattia cronica.* **Obiettivi:** *Presentare un caso di identificazione e gestione di diabete misconosciuto.* **Risultati:** *Diabete di tipo 2 in un impiegato (rischi per la salute: VDT, organizzazione e stress, uso dell'auto aziendale), con improvvisi sintomi visivi rilevati durante un controllo periodico di sorveglianza sanitaria. La diagnosi finale è "diabete mellito con retinopatia proliferativa, edema maculare e polineuropatia prevalentemente sensitiva".* **Discussione:** *Il danno più importante ha coinvolto il visus per lontano, con la conseguente impossibilità di guidare un'auto. Il lavoro è continuato nella stessa azienda del settore terziario avanzato, adattando il ruolo alla nuova condizione di suscettibilità (passaggio da attività dirette presso i clienti a gestore di un gruppo di lavoro, uso limitato di VDT, nessun uso di auto aziendale). I risvolti depressivi per i relativi impatti sulla vita sono stati efficacemente controbilanciati dal forte sostegno sociale ricevuto anche dall'organizzazione del lavoro e dai colleghi.* **Conclusioni:** *Una reazione costruttiva del "sistema aziendale" consente di fornire un supporto utile ed efficace per conciliare la gestione della patologia diabetica e del lavoro, con implicazioni positive concrete sullo stato di salute generale.*

INTRODUCTION

In 2016 there were over 3 million Italian people suffering from diabetes corresponding to 5.3% of the entire population (3). In the last thirty years the prevalence has almost doubled and in the majority of cases (over 90%) the diagnosis of Diabetes Type 2 is made, involving people in adulthood.

Often people who do not seem to belong to major risk groups (i.e. low education, overweight, advanced age), as well as people who already show clinical complications are diagnosed with diabetes. Diabetes could lead to difficult management of the chronic medical therapy and changes in lifestyle. Diabetes complications have then a significant impact not only on the general health costs, but also on the people's quality of life, private as well as at work.

Corporate social responsibility actions could play a significant role in awareness-raising, prevention activities and management in physical, mental and social well-being of the diabetic worker.

METHODS

Free agreement of patient included in the study was obtained before the consultation of the medical records. During data collection and analysis, anonymity and privacy were respected.

We report a case of unknown Diabetes Type 2 in an office worker with sudden visual impairment.

Family history, personal physiologic, pathological and occupational history, general clinical examination, history of ocular disease, visual symptoms and sign were collected by the company occupational physicians during periodical medical consult for renewing pass-issue. The results of complementary investigations such as clinical laboratory analysis (i.e. blood glucose, glycated hemoglobin, thyroid function, etc.), optical coherent tomography (OCT), brain computed tomography (CT) and magnetic resonance imaging (MRI) were also collected. The diagnosis was confirmed by a second level specialist center.

CASE REPORT

A 50 year-old male, normal weight (73 Kg, Body Mass Index=24.2), non-smoker, office worker in the

same multinational company of advanced services for 32 years (hired in 1984), with the task of "Video Display Unit (VDU) operator" (health risks: VDU, organization and stress, use of company car). Personal history shows a familiarity for diabetes (maternal grandfather in old age) and cardiovascular diseases (father with middle-aged heart attack). The personal physiologic and pathological history revealed no abnormalities except the common childhood rashes and a good correction of medium severity myopia with lenses in use (-6.00 diopter at right eye and left eye). No other ergophthalmologic and musculoskeletal abnormality was revealed by medical examination.

During a health surveillance periodical medical consultation, blurred vision (especially for distance), eye heaviness, general fatigue, and limbs discomfort (especially for the lower ones) were reported. These symptoms did not resulted related to workplace conditions (i.e.: use of most recent and ergonomic VDU devices, lightness and chair optimal, etc.) but they impact on the working performance. Musculoskeletal physical examination was normal. The ergophthalmological medical examination detects a binocular distance visual acuity with use of his lenses of 3/10 (Monoyer illuminated optotype at 3m), and a binocular near visual acuity with use of his lenses of 5J (Jaeger standard optotype EN 473 ISO 8596/1996 - UNI EN ISO 8597/1996).

In agreement with the general practitioner and an ophthalmologist, further clinical investigations were required. After excluding other relevant diseases in the differential diagnosis, the focus was on possible diabetes. The diagnosis of "diabetes mellitus with proliferative retinopathy, macular edema and predominantly sensitive polyneuropathy" was confirmed by a second level specialist center. A laser therapy was then performed to stabilizing but not improving the ocular disease. The patient received insulin and metformin therapy and glycemic compensation (HbA1c 6.5% - 48 mmoles/moles, confirmed by diary with a good pre-prandial control) was obtained within a year.

The serious non-reversible blindness leads to the loss of the minimum requirements for diving license set established by the Italian Highway Code. The employee continued to work in the same company

adapting his role to the new condition (transition from customer directed operations to manager of working groups, limited VDU use, and no company car use). The National Social Security Institute (INPS) recognized a civil disability of 80% which allowed the inclusion of the worker among the protected categories.

DISCUSSION

Working in a company of the advanced tertiary sector played a particular role in managing the personal impacts on the psychophysical and social well-being. These work organizations provide services with high innovative content, targeted exclusively to other organizations. Intellectual performance is considered as a “network” rather than a “structure” so far human resource is considered central (2). Discouragement and depressive implications caused by the diagnosis were effectively counterbalanced by the strong social support received from work organization and colleagues.

Diabetic retinopathy is one of the most important ocular complication of diabetes mellitus and affects more than a third of patients. It generally remains silent until the macula is affected; symptoms that may occur include floaters (spots or dark threads that “float”), blurred vision, dark areas, loss of visual acuity and difficulty in perceiving colors (4). It is common for these symptoms to be slowly progressive. When retinal lesions become clinically evident therapy improvement could be limited. This happened also in the case we report.

The most important impairment concerned the distance visual acuity, with the impossibility to drive for both private and business trips. The worker had to get adapted to reaching the company headquarters by public transport (subway station available at less than 100m). He also had to accept to no longer being able to go frequently to customer sites (he was used to travel by company car for about 40,000 Km/year) having to move from the role of “on-site consultant” to that of “remote consultant” (suspension of the use of the company car).

Near visual acuity was found to be less compromised, allowing him to continue using VDU, with interventions aimed at alleviating asthenopia. A larger screen was provided and the occupational

physician defined both the limitation in the timing of VDU use (no more than 4 hours/day) and the prescription of compensatory rests (20 minutes every hour of use of the VDU) more frequents compared to the minimum due by Italian law (15 minutes every two hours).

The involvement of the company occupational physician allowed an efficient coordination with the general practitioner and the specialist. Appropriate enhancement actions were useful for therapy and lifestyle. The glycemic control remains today the most important of the modifiable risk factors to stop or reduce the progression of diabetic retinopathy (1).

In the new work organization, the risk of social self-isolation was avoided by exploiting the worker’s professional skills and moving him to a second-level coordination role in which he could give the benefit of his experience to a group of colleagues, without the need to travel.

Also the workplace environmental experience of the company headquarters, based on a “moderate” open space (i.e.: without cubicles, luminous, with large spaces of movement, aggregation areas, etc.) contributed to the positive impacts.

In conclusion, a positive reaction of the “company system” can really be helpful supporting and managing diabetes and work, with concrete positive implications on his physical, mental and social well-being.

NO POTENTIAL CONFLICT OF INTEREST RELEVANT TO THIS ARTICLE WAS REPORTED BY THE AUTHORS

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