

Review

Psychological burden of alopecia areata in patients with cancer: A narrative review

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Abstract: Alopecia areata is an immune-mediated, non-scarring alopecia that is not specific to cancer but may occur during the cancer trajectory, including diagnosis, active treatment, and survivorship. In oncology settings, hair loss is commonly framed as a temporary and expected consequence of chemotherapy, whereas alopecia areata follows a distinct and often unpredictable course. This narrative review synthesizes current evidence on the psychological burden of alopecia areata in patients with cancer, integrating findings from dermatology, psycho-dermatology, and psycho-oncology. We highlight how alopecia areata contributes to distress, anxiety, depression, body image disturbance, stigma, and impaired health-related quality of life, frequently in ways disproportionate to the visible extent of hair loss. Particular attention is given to the psychosocial significance of diagnostic uncertainty, illness identity disruption, and the reactivation of cancer-related vigilance when alopecia areata emerges during or after oncologic treatment. We discuss potential bidirectional interactions between psychological stress, immune dysregulation, and cancer treatment context, including immune checkpoint inhibitor-associated alopecia. Practical implications for psycho-oncology practice are outlined, emphasizing the importance of timely dermatologic differentiation, systematic psychosocial assessment, empathic communication, and integrated supportive care pathways. Finally, we identify key research gaps, including the need for cancer-specific epidemiological data, standardized psychological outcome measures, and intervention studies evaluating integrated dermatology–psycho-oncology models. Recognizing alopecia areata as a psycho-oncological concern rather than a purely cosmetic issue is essential for person-centred cancer care and improved quality of life.

Keywords: alopecia areata; psycho-oncology; psychological distress; body image; stigma; quality of life; cancer survivorship; supportive care

1. Introduction

Hair loss is among the most visible and emotionally salient changes encountered during the cancer journey. Within oncology care, alopecia has traditionally been discussed primarily in the context of chemotherapy-induced hair loss, which is often anticipated, temporally linked to cytotoxic treatment, and framed as a reversible side effect of therapy. Substantial evidence indicates that chemotherapy-induced alopecia is associated with distress, impaired body image, and reduced quality of life, particularly among women and individuals for whom hair is closely tied to identity and social roles [1,2]. However, considerably less attention has been given to alopecia areata (AA) within supportive oncology, despite its distinct clinical trajectory and psychosocial implications.

AA is an immune-mediated, non-scarring alopecia characterized by patchy or diffuse hair loss that may involve the scalp, eyebrows, eyelashes, or other body sites. Unlike chemotherapy-induced alopecia, AA is often unpredictable in onset and

course, may recur, and is not reliably linked to a discrete treatment window [3,4]. In non-oncology populations, AA has been consistently associated with significant psychological morbidity, including elevated rates of anxiety and depressive symptoms, impaired quality of life, and experiences of stigma, regardless of objective disease severity [5,6]. These features suggest that AA may represent a qualitatively different psychosocial challenge when it occurs in patients with cancer.

Although AA is not a cancer-specific condition, its occurrence along the cancer trajectory is clinically and psychologically meaningful for several reasons. First, AA may emerge during periods of heightened vulnerability, including diagnosis, active treatment, or early survivorship, when patients are already coping with uncertainty, fear of recurrence, physical symptoms, and disruptions to daily life [7–9]. Second, differentiating AA from other causes of hair loss commonly encountered in oncology such as chemotherapy-induced alopecia, endocrine therapy-related shedding, targeted or immune-related alopecia, nutritional deficiency, or neoplastic alopecia can be clinically challenging. Diagnostic uncertainty may heighten distress, particularly when hair loss is misinterpreted as a sign of cancer progression or treatment failure, a concern documented in case-based and clinical reports of alopecia in oncology settings [10,11].

Third, the psychological burden associated with AA may be amplified when layered upon cancer-related stress and altered self-concept. Studies in both oncology and dermatology populations indicate that the emotional impact of hair loss is not solely determined by its extent, but by its symbolic meaning, perceived visibility, and implications for identity and social functioning [1,6]. For patients with cancer, AA may undermine efforts to re-establish a sense of normality or recovery, particularly when hair loss occurs after completion of chemotherapy or during survivorship [12,13]. In this context, AA may function as a secondary psychosocial stressor, reinforcing illness identity and prolonging psychological distress beyond the active treatment phase.

Despite these considerations, alopecia in oncology care is frequently framed as a cosmetic or appearance-related issue rather than a psycho-oncological concern. Clinical attention often focuses on physical management strategies such as wigs or scalp cooling, while systematic assessment of alopecia-related distress, body image disruption, or stigma remains uncommon [14,15]. This gap is particularly pronounced for AA, which may fall outside established oncology care pathways and be managed in parallel dermatology settings without integration of psychological support.

Against this background, this narrative review examines the psychological burden of alopecia areata in patients with cancer, integrating evidence from dermatology, psycho-dermatology, and psycho-oncology. We conceptualize AA as an identity-disrupting condition that may interact with cancer-related vulnerability to exacerbate distress, anxiety, depression, stigma, and impairment in health-related quality of life. In addition, we explore potential mechanisms and moderators of vulnerability, including immune-related factors and illness perceptions, and outline practical considerations for assessment, communication, and integrated supportive care within oncology settings.

2. Alopecia areata as a distinct psychosocial challenge in oncology

In oncology care, hair loss is most commonly interpreted through a biomedical lens as an expected and time-limited adverse effect of treatment. Chemotherapy-induced alopecia, although frequently described by patients as distressing, is typically anticipated, temporally linked to cytotoxic exposure, and framed as a reversible trade-off for therapeutic benefit. Anticipatory counselling, peer normalization, and reassurance regarding hair regrowth often support patients in cognitively preparing for this experience [1,2]. Within this framework, hair loss is frequently positioned as a visible but finite component of cancer treatment.

Alopecia areata (AA) differs fundamentally from this dominant narrative. Its onset may be delayed relative to cancer diagnosis or treatment, its course may be relapsing or chronic, and its outcome is often uncertain. In non-oncology populations, these features have been associated with substantial psychological morbidity, including anxiety, depression, stigma, and impaired quality of life, independent of objective disease severity [5,6]. When AA occurs in patients with cancer, these characteristics may be particularly destabilizing.

From a psychosocial standpoint, the diagnostic label assigned to hair loss carries significant meaning. When hair loss is attributed to chemotherapy, patients may interpret it as an expected and necessary consequence of treatment, often contextualized within narratives of survival and recovery. In contrast, when hair loss is attributed to AA, patients may experience heightened uncertainty, fear of permanence, and loss of agency [16,17]. The unpredictability of AA can undermine patients' assumptions about bodily recovery and control, particularly when it emerges outside the anticipated window of treatment-related side effects. In cancer survivors, AA may reactivate illness identity even after oncologic remission, disrupting efforts to re-establish a sense of normality and closure [18].

Clinical differentiation between AA and other causes of hair loss encountered in oncology further contributes to psychosocial burden. Hair loss in cancer patients may result from chemotherapy, endocrine therapy, targeted agents, immune checkpoint inhibitors, nutritional deficiencies, radiation, or, in rare cases, neoplastic alopecia. Distinguishing among these etiologies is not always straightforward, and periods of diagnostic ambiguity may heighten distress, particularly when patients fear that hair loss reflects disease progression or treatment failure [19]. Case-based and clinical reports have highlighted the emotional impact of alopecia-related diagnostic uncertainty in oncology settings, underscoring that misattribution may itself function as a psychological stressor [10,11].

Beyond diagnostic considerations, AA carries symbolic and identity-related meanings that may be amplified in the context of cancer. Hair is closely tied to self-perception, gender expression, cultural norms, and social identity. Studies in both oncology and dermatology populations indicate that the emotional impact of hair loss is shaped less by its extent than by its perceived visibility, symbolic meaning, and implications for social functioning [1,6]. For patients with cancer, AA may therefore represent not only a physical change but a disruption of personal identity,

including feelings of no longer resembling one's former self or appearing perpetually "unwell" to others.

As illustrated in **Figure 1**, alopecia areata may initiate a psychosocial cascade in patients with cancer, beginning with visible and unpredictable hair loss and progressing through disruption of self-confidence, body image, and personal identity. These identity-related changes contribute to psychological burden, encompassing distress, anxiety, depression, stigma, and reduced health-related quality of life [20,21]. Heightened psychological stress may subsequently interfere with patients' cancer experience, coping capacity, and recovery, reinforcing the need for integrated psycho-oncological intervention alongside oncologic and dermatologic care [22]. Bidirectional interactions between psychological distress and stress-related biological or immune dysregulation may further sustain this cycle, although causal pathways remain incompletely understood [23,24].

Despite this substantial psychological impact, alopecia remains under-recognized within routine oncology care. Hair loss is commonly addressed as an expected cosmetic side effect of chemotherapy, with clinical attention focused on physical management strategies such as wigs or scalp cooling rather than psychological sequelae. Systematic screening for alopecia-related distress, identity disruption, or stigma is uncommon, and referral to psycho-oncology services typically occurs only when patients explicitly report severe emotional symptoms [25]. Alopecia areata, in particular, is rarely conceptualized as a psycho-oncological concern, despite its unpredictable course and well-documented associations with anxiety, depression, and impaired quality of life [5,26]. This disconnect between patient experience and prevailing models of supportive cancer care underscores the need to more explicitly integrate alopecia areata into psycho-oncology frameworks.

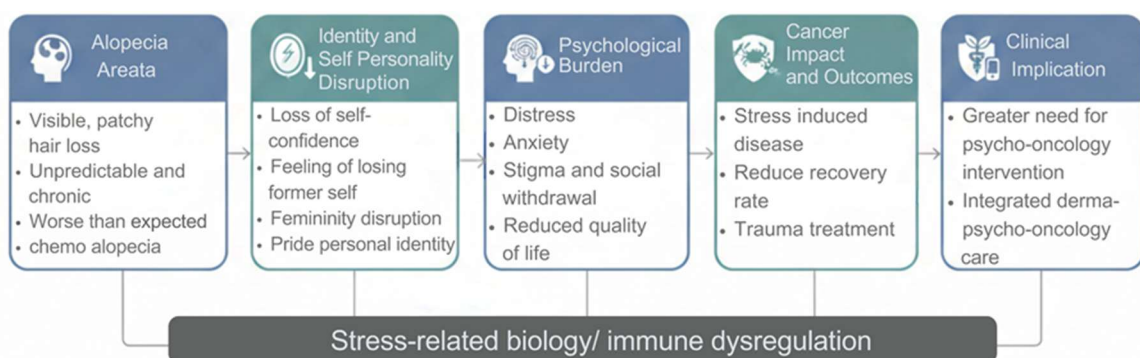


Figure 1. Conceptual model illustrating the psychosocial cascade through which alopecia areata contributes to psychological burden in patients with cancer.

3. Clinical differentiation and diagnostic meaning

Alopecia areata (AA) typically presents as well-demarcated patches of non-scarring hair loss, although more extensive variants such as alopecia totalis and alopecia universalis may also occur. In oncology settings, however, the clinical presentation of hair loss is often heterogeneous, reflecting the wide range of treatments and systemic stressors encountered during the cancer trajectory [27,28]. Chemotherapy-induced alopecia is usually diffuse and temporally associated with

cytotoxic exposure, whereas endocrine therapies, targeted agents, immunotherapies, nutritional deficiencies, and radiation may produce diverse alopecia phenotypes with variable timing and distribution [29,30]. This clinical overlap contributes to frequent diagnostic uncertainty when hair loss emerges in patients with cancer.

Among the differential diagnoses, distinguishing AA from neoplastic alopecia is of particular clinical and psychological importance. Neoplastic alopecia represents a rare form of secondary alopecia caused by cutaneous metastasis, most commonly associated with breast cancer, and may present as localized or patchy hair loss that closely mimics AA [31,32]. Classic clinicopathological descriptions and subsequent case series have demonstrated that neoplastic alopecia may occur in the absence of overt scalp nodules or inflammation, rendering clinical recognition challenging [33,34]. Because neoplastic alopecia may signal disease recurrence or progression, failure to recognize this entity carries both prognostic and emotional consequences.

Beyond medical safety considerations, diagnostic uncertainty itself constitutes a significant psychological stressor for patients with cancer. Periods of ambiguity regarding the cause of hair loss may intensify anxiety, reinforce fears of recurrence, and undermine patients' trust in bodily signals [35]. For individuals who have learned to monitor physical changes as potential indicators of cancer activity, unexplained alopecia may be interpreted catastrophically, even when objective evidence of disease progression is absent [36]. In this context, hair loss may function as a symbolic threat, reactivating cancer-related vigilance and distress.

Timely dermatologic evaluation is therefore critical not only for diagnostic accuracy but also for psychological containment. Dermatologic assessment, including trichoscopy and, when indicated, scalp biopsy, can clarify etiology and reduce prolonged uncertainty. Clinical reports emphasize that histopathological confirmation is often necessary to differentiate AA from neoplastic alopecia or other secondary causes in oncology patients [33,34]. From a psycho-oncological perspective, diagnostic clarification may alleviate distress by restoring a sense of control and predictability, even when the diagnosis itself carries emotional weight.

The emergence of immune checkpoint inhibitor–associated alopecia has further complicated diagnostic pathways in modern oncology. AA-like presentations have been increasingly reported in patients receiving immunotherapy, often occurring months after treatment initiation and sometimes accompanied by poliosis during regrowth [11]. Although immune-related AA is generally considered a manageable adverse event that does not necessitate discontinuation of cancer therapy, its delayed onset and autoimmune mechanism may be confusing for patients and clinicians alike. Patients may struggle to reconcile the appearance of new autoimmune symptoms with narratives of treatment success or remission, contributing to emotional ambivalence and uncertainty [37].

Importantly, the diagnostic label assigned to hair loss shapes its psychological meaning. When hair loss is attributed to chemotherapy, patients may frame it as an expected, time-limited consequence of treatment. In contrast, when hair loss is diagnosed as AA, patients may perceive it as unpredictable, potentially chronic, and disconnected from the cancer treatment timeline. This shift in meaning may exacerbate feelings of loss of control, fear of permanence, and concerns about ongoing bodily vulnerability. Studies across dermatology and oncology contexts

indicate that such illness perceptions are key determinants of psychological outcomes, often exerting greater influence than objective clinical severity [1,6].

Taken together, these considerations underscore that clinical differentiation of alopecia phenotypes in oncology is inseparable from their psychological interpretation. Accurate and timely diagnosis serves not only to guide medical management but also to shape patients' emotional responses and coping strategies. Key clinical and psychosocial distinctions between chemotherapy-induced alopecia, alopecia areata, and immune checkpoint inhibitor-related alopecia is summarized in **Table 1**, highlighting why alopecia areata represents a distinct psychosocial challenge within oncology care.

Table 1. Comparison of alopecia phenotypes encountered in oncology and their psychosocial implications.

Feature	Chemotherapy-induced alopecia	Alopecia areata	Immune checkpoint inhibitor-related alopecia areata
Pathophysiology	Cytotoxic damage to rapidly dividing hair matrix cells	Autoimmune T-cell-mediated follicular attack	Immune-related adverse event due to immune activation
Onset	Predictable, temporally linked to chemotherapy cycles	Unpredictable; may occur during or after cancer treatment	Often delayed (months after ICI initiation)
Pattern	Diffuse scalp hair loss	Patchy or diffuse; may involve eyebrows, eyelashes, body hair	Patchy AA or alopecia universalis; poliosis during regrowth reported
Expected course	Typically-reversible after treatment completion	Chronic or relapsing course common	Often reversible but may be persistent or severe
Diagnostic meaning for patients	"Expected trade-off" for cancer treatment	Uncertainty; fear of permanence or recurrence	Psychological paradox: distress vs perceived treatment success
Psychological impact	High distress but often temporally bounded	High anxiety, depression, stigma independent of severity	Distress compounded by uncertainty and symbolic meaning
Psycho-oncology relevance	Well recognized	Under-recognized in oncology	Emerging and clinically important

4. Psychological burden domains

4.1. Distress, anxiety, and depression

Alopecia areata (AA) is consistently associated with elevated levels of psychological distress, anxiety, and depressive symptoms. Evidence from large observational studies and meta-analytic syntheses in non-oncology populations indicates that individuals with AA have significantly higher odds of anxiety and depression compared with controls, with psychological burden often present regardless of objective disease severity [5,6]. Importantly, these findings challenge the assumption that distress is proportional to the extent of hair loss and instead highlight the central role of subjective meaning, uncertainty, and perceived visibility.

In patients with cancer, vulnerability to distress, anxiety, and depression is already heightened due to diagnosis-related shock, treatment toxicity, prognostic uncertainty, and existential concerns. When AA develops in this context, it may exacerbate pre-existing emotional strain or reactivate psychological vulnerabilities that had been partially managed during earlier phases of cancer care [38]. Cancer patients frequently experience fatigue, sleep disturbance, pain, and cognitive burden, all of which may interact with AA-related distress and reduce coping capacity. As a

result, even relatively limited or patchy hair loss may precipitate disproportionate emotional reactions.

Evidence from psycho-oncology research on cancer-related alopecia further underscores the emotional salience of hair loss. Studies of chemotherapy-induced alopecia demonstrate that distress related to hair loss is among the most severe treatment-related concerns reported by patients, often exceeding distress associated with other physical side effects [1,2]. Although these studies do not specifically focus on AA, they provide important contextual evidence that hair loss represents a potent emotional stressor in oncology populations. When AA occurs, its unpredictable and potentially chronic nature may further intensify distress by undermining expectations of recovery or bodily normalization.

Moreover, longitudinal evidence suggests a bidirectional relationship between AA and depression, in which psychological distress may increase vulnerability to autoimmune activity, while AA-related symptoms contribute to the persistence or worsening of depressive symptoms [5]. In oncology settings, where stress-related biological and immune perturbations are already present, this bidirectional framework offers a clinically useful lens for understanding how AA and psychological distress may reinforce one another without implying direct causality [39–41].

4.2. Body image and identity disruption

Hair holds profound symbolic meaning related to identity, vitality, gender expression, and social belonging. Across cultures, hair functions as a marker of femininity, masculinity, youthfulness, and personal style, and its loss may therefore disrupt core aspects of self-concept [1,42]. In cancer populations, body image concerns frequently arise from surgical scars, weight fluctuations, ostomies, or other treatment-related bodily changes [43,44]). AA may compound these challenges by introducing an additional, highly visible alteration that is not clearly framed within the expected cancer treatment narrative.

Studies in oncology populations demonstrate that hair loss is closely associated with impaired body image, shame, and reduced self-esteem, particularly among women [1,2]. Although these studies primarily address chemotherapy-induced alopecia, their findings are highly relevant to AA, as they underscore the emotional significance of hair for self-perception and social identity. In AA, the patchy or fluctuating pattern of hair loss may further complicate body image concerns, as patients may feel unable to predict or control changes in their appearance.

Loss of eyebrows or eyelashes may be especially distressing, as these features play a central role in facial identity and emotional expression. Patients may report feeling that their face appears unfamiliar or “expressionless,” contributing to a sense of losing one’s former self [45,46]. Such experiences may undermine confidence in social interactions and intimacy, leading to avoidance behaviours and emotional withdrawal. In cancer patients, these identity disruptions may be particularly salient during survivorship, when individuals are attempting to reclaim a sense of normalcy and continuity with their pre-illness identity [18].

Importantly, body image disturbance in AA is not limited to internal

dissatisfaction but is often shaped by anticipated or actual social evaluation. Fear of being perceived as ill, fragile, or permanently altered may amplify self-consciousness and reinforce negative self-appraisals. These processes highlight that AA-related body image concerns are relational as well as intrapersonal, unfolding within broader social and cultural contexts.

4.3. Stigma, social functioning, and work life

Stigma represents a central component of the psychological burden associated with AA. Individuals with visible or patchy hair loss may experience both perceived-stigma, such as fear of negative judgment, and internalized stigma, characterized by shame or self-blame. Evidence from large AA cohorts indicates that stigma independently predicts poorer quality of life, anxiety, and depressive symptoms, even after controlling for disease severity [6].

In oncology settings, stigma related to AA may intersect with cancer-related stigma, compounding social vulnerability. Patients may fear that visible hair loss will prompt intrusive questions, unwanted sympathy, or assumptions about prognosis. As a result, some individuals avoid social gatherings, religious activities, or professional settings. In the workplace, concerns about appearance and credibility may be particularly salient in client-facing or leadership roles, where visible difference may undermine confidence or perceived authority [47].

Concealment strategies, including wigs, head coverings, cosmetic camouflage, or eyebrow solutions, may help some patients regain a sense of control and social confidence. However, these strategies also impose practical, emotional, and financial burdens. Time spent on appearance management, discomfort associated with prostheses, and costs not covered by insurance may contribute to cumulative psychosocial strain, particularly when layered onto existing financial toxicity related to cancer treatment [48].

4.4. Health-related quality of life

The psychological impact of AA extends beyond discrete emotional symptoms to broader impairments in health-related quality of life (HRQoL). Studies using validated instruments demonstrate that AA is associated with significant reductions in HRQoL across emotional, social, and role-functioning domains, with many patients reporting moderate to severe impact on daily life [6]. Notably, HRQoL impairment is often poorly correlated with clinician-rated disease severity, reinforcing the importance of patient-reported outcomes.

In oncology care, AA-related quality-of-life impairments may accumulate alongside treatment demands, frequent medical appointments, fatigue, and financial stress. Patients may limit participation in meaningful activities, delay returning to work, or withdraw from intimate relationships due to concerns about appearance and stigma. Sexual well-being may also be affected, as body image concerns and reduced self-confidence interfere with intimacy and desire [49,50].

Taken together, these findings underscore that the psychological burden of AA in patients with cancer is multidimensional and pervasive, affecting emotional well-being, identity, social functioning, and quality of life. The key psychological

domains associated with AA and cancer-related alopecia are summarized in **Table 2**, which synthesizes evidence across distress, anxiety and depression, body image disturbance, stigma, and HRQoL, and highlights why alopecia areata warrants explicit consideration within psycho-oncology frameworks.

Table 2. Psychological burden domains associated with alopecia and alopecia areata across oncology and dermatology contexts.

Psychological domain	Evidence	Population/context	Key findings relevant to psychological burden
Distress	[1,2]	Breast cancer patients receiving chemotherapy	Alopecia consistently ranked among the most distressing treatment side effects; distress persisted despite anticipatory counselling and exceeded many physical toxicities
Anxiety	[5,51]	Alopecia areata patients (general population)	AA associated with ~2.5-fold higher odds of anxiety; anxiety prevalent across disease severities and not proportional to extent of hair loss
Depression	[5,51]	Alopecia areata patients	AA associated with ~2.7-fold higher odds of depression; bidirectional relationship suggested between AA and depressive disorders
Body image disturbance	[1,2]	Cancer patients with alopecia	Hair loss associated with impaired body image, shame, reduced femininity/masculinity, and disrupted self-identity
Stigma	[1,51]	Alopecia areata patients	High levels of perceived and internalized stigma; stigma independently predicted poorer quality of life, anxiety, and depression

5. Mechanisms and moderators of vulnerability

Alopecia areata (AA) is an immune-mediated condition characterized by autoimmune targeting of the hair follicle, resulting in non-scarring hair loss [23]. Although definitive causal relationships remain difficult to establish, a bidirectional framework is increasingly used to conceptualize the relationship between psychological distress and AA, wherein stress-related immune perturbations may contribute to disease activity, and AA-related symptoms may in turn intensify psychological distress [5].

In patients with cancer, this bidirectional model may be particularly salient. Cancer itself represents a profound biological and psychological stressor, associated with systemic inflammation, hypothalamic–pituitary–adrenal axis activation, and immune dysregulation. Anticancer treatments further introduce immune perturbations through cytotoxic effects, hormonal modulation, or targeted immune activation [52]. When AA develops in this context, it may reflect the convergence of underlying autoimmune susceptibility, treatment-related immune shifts, and heightened psychological stress. While mechanistic pathways linking cancer, stress, and AA remain incompletely understood, this integrative framework provides a clinically useful lens for understanding why AA may emerge or worsen during the cancer trajectory without implying direct causation [53].

The increasing use of immune checkpoint inhibitors (ICIs) has added further complexity to this landscape. AA and alopecia universalis have been documented as immune-related adverse events in patients receiving ICIs, often developing months after treatment initiation and occasionally accompanied by poliosis during regrowth [11]. Importantly, immune-related AA is generally considered manageable and does not typically necessitate discontinuation of oncologic therapy. However, its

psychological implications may be substantial. For some patients, the emergence of AA during immunotherapy creates a paradox in which visible hair loss symbolizes both effective immune activation and personal distress. This dual meaning may generate emotional ambivalence, complicating coping and meaning-making during treatment [54,55].

Beyond biological mechanisms, individual and contextual factors play a critical role in shaping psychological vulnerability to AA. Evidence from large AA cohorts indicates that psychological outcomes are strongly influenced by illness perceptions, stigma, and perceived consequences, often to a greater extent than clinical severity [6]. In oncology settings, additional moderators may include age, gender identity, pre-existing mental health conditions, coping style, and perceived social support. Adolescents and young adults, for example, may be particularly vulnerable to appearance-related distress due to developmental and social factors [56].

Cultural norms regarding hair, femininity, masculinity, and visibility also shape responses to AA. In some cultural contexts, head coverings or wigs may be experienced as empowering or socially acceptable, whereas in others they may be perceived as stigmatizing or restrictive. Socioeconomic factors, including access to high-quality camouflage options and supportive services, further influence psychological outcomes. These moderators underscore that vulnerability to AA-related distress is not uniform and must be understood within broader social and cultural contexts [57].

Taken together, these mechanisms and moderators suggest that AA-related psychological burden in cancer patients arises from the interaction of immune processes, stress responses, treatment context, and individual meaning-making. Recognizing this complexity supports a move away from purely biomedical explanations toward integrated psycho-oncological models that address both biological vulnerability and psychosocial context.

6. Assessment and communication in psycho-oncology

Assessment of alopecia areata (AA) in patients with cancer should extend beyond dermatologic severity to encompass psychological and functional domains that shape patient experience. Evidence from AA cohorts indicates that distress, anxiety, depression, stigma, and quality-of-life impairment are often poorly correlated with clinician-rated disease extent, underscoring the limitations of relying solely on visible hair loss as an indicator of burden [5,6]. In oncology settings, where multiple competing symptoms are present, AA-related psychological distress may therefore remain unrecognized unless it is explicitly assessed.

A pragmatic assessment framework within psycho-oncology practice includes screening for emotional distress, anxiety and depressive symptoms, body image concerns, perceived stigma, social avoidance, and health-related quality of life. Brief screening tools can be integrated into routine oncology workflows, with positive screens prompting more detailed evaluation or referral. Although condition-specific instruments such as the Chemotherapy-Induced Alopecia Distress Scale (CADS) were developed for treatment-related hair loss, their conceptual domains emotional, functional, and relational distress are highly relevant to AA in cancer populations

[2]. Selection of assessment tools should balance clinical feasibility with sensitivity to appearance-related distress [58].

Importantly, AA-related distress may not be volunteered spontaneously by patients. Studies in oncology populations suggest that appearance-related concerns are often minimized or deprioritized during clinical encounters, either because patients perceive them as trivial relative to cancer or because clinicians focus on biomedical priorities [1]. As a result, reliance on patient-initiated disclosure may underestimate psychological burden. Routine inclusion of appearance-related questions within distress screening protocols may therefore help identify patients who would benefit from psycho-oncological support [59].

Clinical communication plays a central role in mitigating AA-related distress. Clear explanations that AA is distinct from chemotherapy-induced alopecia and not necessarily a sign of cancer progression can reduce catastrophic interpretations and uncertainty. Case-based evidence highlights that misattribution of alopecia in oncology settings may heighten anxiety and reinforce fears of recurrence, emphasizing the importance of timely diagnostic clarification [10,11]. Communication should be patient-centred and iterative, allowing space for emotional reactions rather than focusing exclusively on reassurance.

Empathic validation is particularly important. Minimizing hair loss as a cosmetic issue or emphasizing that “it will grow back” may inadvertently invalidate patients’ experiences and discourage disclosure of distress. Instead, clinicians should acknowledge the emotional and identity-related impact of hair loss while providing balanced information about prognosis and management options [47]. Such communication strategies align with psycho-oncological principles and may facilitate adaptive coping, engagement with supportive services, and trust in the care team [60].

7. Integrated management and supportive care

Optimal care for patients with cancer who develop alopecia areata (AA) requires interdisciplinary collaboration across oncology, dermatology, and psycho-oncology. In current clinical practice, management of alopecia in oncology settings is often fragmented, with dermatologic evaluation, oncologic treatment, and psychological support occurring in parallel rather than in coordination. This fragmentation may contribute to prolonged diagnostic uncertainty, inconsistent messaging, and under-recognition of psychological burden. An integrated dermatology–psycho-oncology care pathway is therefore essential to address both the medical and psychosocial dimensions of AA.

As outlined in **Figure 2**, early identification and diagnostic clarification represent the first critical step. New or atypical alopecia in patients with cancer should prompt timely dermatologic evaluation to differentiate AA from chemotherapy-induced alopecia, immune-related alopecia, endocrine therapy–associated shedding, and neoplastic alopecia. Accurate diagnosis not only guides appropriate dermatologic management but also reduces anxiety associated with uncertainty and fear of cancer recurrence, which have been documented in cases of alopecia misattribution in oncology settings [10,34]. From a psycho-oncological

perspective, diagnostic clarity functions as an intervention in its own right by reducing catastrophic interpretations.

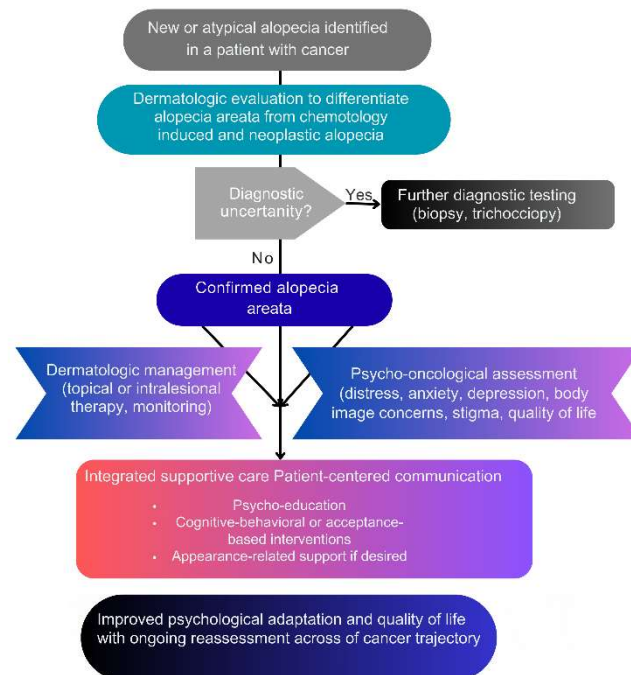


Figure 2. Integrated clinical and psycho-oncology care pathway for alopecia areata in cancer patients.

Concurrent with dermatologic assessment, psycho-oncological screening should be initiated to evaluate distress, anxiety, depressive symptoms, body image concerns, perceived stigma, social avoidance, and health-related quality of life. Evidence from AA cohorts indicates that psychological burden is frequently disproportionate to clinical severity, reinforcing the need for systematic screening rather than reliance on visible hair loss or patient-initiated disclosure [5,6]. Integration of brief screening tools into oncology workflows enables early identification of patients who may benefit from supportive interventions.

Management should proceed in a coordinated and stepped manner, integrating dermatologic treatment with patient-centred communication, psychoeducation, and psychosocial support. Dermatologic therapies may include topical or intralesional corticosteroids, observation, or referral for specialized care depending on disease extent and treatment context. Importantly, dermatologic management should be accompanied by clear communication regarding prognosis, uncertainty, and treatment expectations. Patients benefit from understanding that AA is distinct from chemotherapy-induced alopecia and is not necessarily indicative of cancer progression or treatment failure [11].

Psychoeducation represents a foundational component of supportive care. Education should address the unpredictable nature of AA, normalize emotional reactions, and emphasize that distress related to hair loss is common and valid. Studies in oncology populations demonstrate that normalization and anticipatory guidance can mitigate distress associated with appearance-related changes [1,2]. For AA, psychoeducation may help patients reframe uncertainty and reduce self-blame

or catastrophic thinking.

Targeted psychosocial interventions should be offered based on symptom severity and patient preference. Cognitive-behavioural approaches may assist patients in identifying and modifying maladaptive cognitions related to appearance, stigma, and permanence, while acceptance-based strategies may support coping with chronic uncertainty and loss of control [61,62]. These approaches align with broader psycho-oncological principles and may be delivered individually or in group settings. Peer support groups, whether condition-specific or cancer-focused, may further normalize experiences and provide practical coping strategies [61].

Appearance-related support, including wigs, scalp prostheses, eyebrow solutions, and cosmetic camouflage, should be discussed as optional resources rather than obligations. Framing concealment strategies as tools to restore agency and choice, rather than as requirements to conform to social expectations, is essential to avoid reinforcing stigma. Financial and practical barriers to accessing appearance-related resources should also be acknowledged, particularly in the context of cancer-related financial toxicity [63,64].

Referral to specialized psycho-oncology services, counselling, or psychiatry is indicated when patients experience clinically significant anxiety, depression, or functional impairment. Integrated care pathways facilitate timely referral and reduce the burden on patients to navigate multiple services independently. An overview of psycho-oncology aligned management strategies for AA in cancer patients is summarized in **Table 3**, highlighting interventions across assessment, education, psychosocial support, and follow-up. integrated management recognizes AA not merely as a dermatologic condition but as a psychosocial stressor embedded within the cancer experience. Coordinated care pathways that combine diagnostic accuracy, empathic communication, and targeted psychosocial intervention are likely to provide the greatest benefit for patients navigating the dual challenges of cancer and alopecia areata.

Table 3. Psycho-oncology–aligned management strategies for alopecia areata in cancer patients.

Care domain	Strategy	Evidence	Psycho-oncology rationale
Diagnostic clarification	Early dermatology referral; biopsy if atypical	[33,34]	Reduces uncertainty, prevents misdiagnosis of neoplastic alopecia, mitigates fear of recurrence
Psychological screening	Anxiety, depression, distress, QoL assessment	[2,51]	Psychological burden not predicted by hair loss extent; screening identifies high-risk patients
Clinical communication	Clear explanation of AA vs chemotherapy alopecia	[1,2]	Diagnostic meaning shapes distress more than physical severity
Psychoeducation	Normalize emotional reactions; address unpredictability	[51]	Improves illness understanding; lower anxiety associated with better illness coherence
Cognitive-behavioural strategies	Address catastrophizing, avoidance, stigma	[5,51]	Targets key drivers of anxiety and depression
Appearance-related support	Wigs, eyebrow solutions, camouflage options	[1,2]	Restores agency and social confidence without medicalizing appearance
Interdisciplinary care	Dermatology–psycho-oncology collaboration	[10,11]	Addresses biological and psychological dimensions simultaneously

8. Research gaps and future directions

Despite growing recognition of the psychological burden associated with alopecia areata (AA), cancer-specific evidence remains limited and fragmented. Most existing data on AA-related psychological outcomes are derived from general dermatology populations, with few studies explicitly examining AA within oncology cohorts. As a result, the prevalence, timing, and clinical correlates of AA across different cancer types and treatment phases remain poorly characterized. This gap limits clinicians' ability to anticipate risk, counsel patients effectively, and design targeted supportive care interventions.

Future research should prioritize prospective study designs that capture the dynamic nature of AA and its psychological impact across the cancer trajectory, including diagnosis, active treatment, survivorship, and recurrence. Longitudinal approaches would allow examination of temporal relationships between hair loss, psychological distress, and adaptation, as well as identification of periods of heightened vulnerability. Stratification by cancer type, stage, and treatment modality including chemotherapy, endocrine therapy, targeted agents, and immune checkpoint inhibitors is particularly important, given emerging evidence that immune-related alopecia may follow distinct clinical and psychological patterns [11].

Standardization of psychological outcome measures represents another critical need. Studies to date have used heterogeneous instruments, limiting comparability and synthesis. Incorporation of validated measures assessing distress, anxiety, depression, stigma, body image, and health-related quality of life would strengthen the evidence base and facilitate integration of alopecia-related outcomes into psycho-oncology research frameworks. Importantly, outcome selection should reflect patient priorities rather than clinician-rated severity alone, as psychological burden is often disproportionate to objective hair loss extent [6].

Intervention research remains notably sparse. There is a need for trials evaluating integrated models of care that combine dermatologic management with psycho-oncological interventions, such as psychoeducation, cognitive-behavioural strategies, acceptance-based approaches, and peer support [65,66]. Stepped-care models embedded within oncology services may be particularly feasible and scalable. Evaluation of appearance-related support interventions, including access to wigs or cosmetic resources, should also consider psychological outcomes rather than cosmetic satisfaction alone [30].

Finally, qualitative research is essential to deepen understanding of how patients with cancer interpret and assign meaning to AA. Narrative and phenomenological studies can illuminate identity disruption, stigma experiences, cultural norms surrounding hair, and barriers to help-seeking that are not captured by quantitative measures. Such work is critical for informing culturally sensitive, patient-centred care and ensuring that future interventions align with lived experience rather than clinical assumptions thereby improving overall support systems for cancer patients [41,67,68].

9. Conclusion

Alopecia areata represents a meaningful yet under-recognized source of

psychological burden in patients with cancer. Distinct from chemotherapy-induced alopecia, its unpredictable onset, fluctuating course, and uncertain prognosis challenge patients' expectations of recovery and bodily control. When alopecia areata emerges during or after cancer treatment, it may disrupt identity, reactivate illness-related vigilance, and generate disproportionate distress that is not adequately explained by the visible extent of hair loss alone. This narrative review highlights that alopecia areata functions not merely as a dermatologic condition but as a psycho-oncological stressor that intersects with distress, anxiety, depression, stigma, body image disturbance, and impaired quality of life. Diagnostic ambiguity and misattribution may further intensify psychological burden, underscoring the importance of timely dermatologic evaluation and clear communication. At present, alopecia-related distress is often framed as a cosmetic concern within oncology care, resulting in underassessment and delayed psychosocial support. Integrating dermatologic expertise with psycho-oncology informed assessment, empathic communication, and stepped supportive care offers a pragmatic pathway to mitigate suffering and support adaptive coping. Recognizing alopecia areata as both a medical and psychological condition aligns with person-centred oncology and addresses a gap between patient experience and existing supportive care models. Greater attention to alopecia areata within psycho-oncology has the potential to improve quality of life, enhance survivorship care, and ensure that visible yet overlooked sources of distress are not neglected in comprehensive cancer care.

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